

CLOSEOUT COSTS

CLINCH RIVER BREEDER REACTOR PROJECT

HEARING BEFORE THE COMMITTEE ON SCIENCE AND TECHNOLOGY U.S. HOUSE OF REPRESENTATIVES NINETY-SEVENTH CONGRESS FIRST SESSION

MAY 11, 1981

[No. 30]

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CLOSEOUT COSTS CLINCH RIVER BREEDER REACTOR PROJECT

MONDAY, MAY 11, 1981

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, D.C.

The committee met, pursuant to call, at 1:30 p.m., in room 2318, Rayburn House Office Building, Hon. Don Fuqua (chairman) presiding.

Present: Representatives Fuqua, Winn, Brown, Fish, Lujan, Ottinger, Harkin, Bouquard, Walgren, Sensenbrenner, Weber, Gore, Gregg, Young, McGrath, White, Skeen, Volkmer, Schneider, Wolpe, Nelson, Lowery, Ertel, Shamansky, and McCurdy.

The CHAIRMAN. The committee will be in order.

The media has requested permission for television and radio coverage of the hearing. Is there objection?

Mr. SENSENBRENNER. Reserving the right to object, Mr. Chairman, and I shall not object, but I want to take this opportunity to point out to the committee and to the media representatives present the provisions of clause 3 of House Rule 11 which requires that the television and film cameras must operate from fixed positions in a way so as not to obstruct the view of any member of the committee or people at the witness table and that the still photographers must not position themselves between the witness table and the members of the committee.

We have had a little problem in previous hearings of the committee with the media complying with those provisions of House Rule 11 and I would hope if there is a violation today the chairman would bring that to the attention of the media immediately.

I withdraw my reservation.

The CHAIRMAN. Is there objection to the request?

The Chair hears none. It is so ordered and I would ask the media to observe the rules in the process of carrying out their responsibilities.

The meeting today is to try to determine certain costs that may be affected by the committee action last week as it relates to the Clinch River breeder reactor project.

I would like to stress to the members of the committee that we are not here today to debate the pros and cons of Clinch River, but to try to determine what the budgetary actions are that we must take in exercising our responsibilities in the authorization bill as it relates to certain obligations of the Government and the pending obligations the Government may or may not have.

I would hope we could confine our inquiries and questions to the scope of this proceeding. We will certainly have an opportunity for everybody to ask a question and to be fully informed.

We should direct ourselves to the question before us and not the merit or demerits of the project.

Mr. OTTINGER. I wonder if I might make a brief statement.
The CHAIRMAN. The gentleman is recognized.

Mr. OTTINGER. I would like to express my distress that John Deutch, who was the former Assistant Secretary of the Department of Energy, who had responsibility for this project, is not able to come and testify on this matter before us today.

At my request he has written the Chair with respect to his opinion on this and I think having him here to answer questions would have been very helpful.

I am particularly concerned since my request that he be invited to testify was looked at so negatively by Dr. Hanson, our executive director, who expressed to me the attitude that we don't want differing opinions on this because it will only confuse us.

We want to know what the costs are from the Department.

It seems to me it is our responsibility to exercise a very difficult judgment in these matters. We ought to get the maximum amount of information we can to enlighten us on this matter.

Mr. Deutch, at my request, did write to the Chair and gave his position. With your permission, I would like to read his letter into the record at this point so the other members have the benefit of that information.

The CHAIRMAN. We can make a copy of it a part of the record if it will help expedite the proceedings.

[The letter follows:]

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CHEMISTRY

ROOM 6-123

CAMBRIDGE, MASSACHUSETTS 02139

JOHN M. DEUTCH

ARTHUR C. COPE
PROFESSOR OF CHEMISTRY

May 11, 1981

Hon. Don Fuqua
Chairman, Committee on Science
and Technology
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Last week's vote by your Committee to terminate the Clinch River Breeder Reactor (CRBR) Project was an important decision to strengthen our nation's energy future.

As you know, I favor nuclear energy and breeder reactor research and development. Nevertheless, while Undersecretary of the Department of Energy, I consistently advised that the CRBR be cancelled because the project is technically outdated, too expensive for what could be learned from it, and directed toward uneconomical and premature commercialization of the breeder. A much wiser course of action would be to commence a new, modern breeder research and development project in the mid-eighties; this new project appropriately could be sited in the neighborhood of the CRBR location in Tennessee.

Your Committee's action can make available much-needed resources for other energy research and development areas, including more pressing nuclear programs, such as away-from-reactor storage, light water reactor reliability and safety, and the development of important alternative nuclear reactor systems such as the High Temperature Gas-Cooled Reactor.

Several members of your Committee have requested my opinion on the amounts required to be appropriated for CRBR close-out costs and consequent FY82 program funding. In my judgment, close-out costs should approximate \$80-120M, including activities to "box-up" components, pay contract termination costs, and complete work (including some design effort) that makes sense in an orderly termination. It is

my understanding that approximately \$40M in FY81 funds will remain unobligated (assuming a June 1 termination), to which \$50M presently pending in the FY81 supplemental request could be added. Therefore, the maximum required funding for FY82 would be \$30M.

I do not believe that it would be wise to devote substantial additional resources to completion of the CRBR design. From a technical viewpoint, these resources would be better spent if allocated to the design of a new breeder research and development plant.

As to the disposition of the utility contributions to the CRBR project, which I understand amount to \$110-115M, my strong view is that this is a legal matter best left to negotiation between DOE and the participating utilities. I would not pre-judge the outcome of these negotiations, and I certainly would not advocate putting any funds into the FY82 authorization bill to cover this contingency.

Under your leadership, the Science and Technology Committee can achieve significant savings for the U.S. taxpayer, help put in place a stronger energy technology program, and design a new breeder development effort that takes better advantage of the advances that have been made in the breeder base program during the past ten years.

As always, I stand ready to assist the Committee in this effort, and I congratulate you for your continuing strong leadership in the energy research and development area.

Sincerely,

A handwritten signature in dark ink, appearing to read "John M. Deutch". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

John M. Deutch

Mr. OTTINGER. He comes out with the conclusion that the total:

Closeout costs should approximate \$80-120 million, including activities to "box-up" components, pay contract termination costs, and complete work, including some design effort that makes sense in an orderly termination. It is my understanding that approximately \$40 million in fiscal year 1981 funds will remain unobligated, assuming a June 1 termination, to which \$50 million presently pending in the fiscal year 1981 supplemental request could be added. Therefore, the maximum required funding for fiscal year 1982 would be \$30 million.

He comes out very strongly, as well, to say we should not pay the design costs because he feels the design of any future breeder reactor we might build for commercial purposes would certainly not use this design.

I think that is very important information. I think it ought to be before the committee.

Mr. HARKIN. I would just like to request that we have the staff make copies of it right now.

The CHAIRMAN. It is my understanding they are in the process of doing that, and another letter from the Department of Energy which will be made available to all members.

Mr. HARKIN. I would like to ask if there is any possibility of having John Deutch before us. We have had him many times in the past.

The CHAIRMAN. I might say, in addition, Dr. Deutch found he had another commitment and was unable to be here.

Mr. OTTINGER. He arranged for canceling out his previous schedule and coming down here.

It is necessary that he be in California tonight. He said he got the impression that he was really not wanted and that was certainly the impression I got.

I don't think that was quite the opinion of the Chair. I have always known the chairman to be a fair person and I would think he would want to have as many conflicting points of view from knowledgeable people as he could get in order that he could arrive at the best possible decision.

The CHAIRMAN. When the committee met Thursday afternoon we asked who were the people we should have. The gentleman from New York suggested we have someone from GAO. We have someone from GAO. Dr. Deutch's name was not mentioned at that time. He is a very knowledgeable person.

Mr. OTTINGER. I said we would like to get somebody with differing points of view and I did not know who that would be at the time. The time limits under which we are operating are very restricted and I appreciate that. He is the best person I could come up with in the limited time we had.

Dr. Deutch did have responsibility in this area and I think it would be helpful to have him appear before the committee. I think it would be valuable to have him answer questions.

I am very grateful to him for providing this letter which does give some information which ought to be helpful to the committee in making its decision.

Mr. ERTEL. Mr. Chairman, I have heard Dr. Deutch testify here in the past. I do not necessarily agree with him all the time, but I think it would be helpful, since he has a lot of knowledge about this, that he would be helpful in appearing before us. Just because

he has left the Government doesn't mean he has lost all his expertise.

I think we ought to try to set up a special hearing to have him here so we can get the benefit of his knowledge.

Mr. WOLPE. Mr. Chairman, I also had a conversation on Friday with the director of the staff with respect to some other names that were suggested to me as people who were knowledgeable in this area.

I do not know the individuals in the Office of Management and Budget, but they are most conversant with this particular subject. I wonder if any invitation was extended to them.

The CHAIRMAN. A letter was directed to the Office of Management and Budget asking that they send someone up. I did not tell them who to send up.

Mr. WOLPE. I also mentioned the names of two individuals, Shelby Brewer and Woody Cunningham within the Department of Energy. I understand they are particularly knowledgeable about the subject.

Was an invitation extended to them?

The CHAIRMAN. An invitation was extended to the Secretary of Energy to provide people who would be of most help to the committee in answering the questions we may have.

Mr. WOLPE. Thank you.

Mrs. BOUQUARD. In view of the statements that were made regarding Dr. Deutch's testimony, if we are going into this in depth I think we should see his testimony on the previous R. & D. program where he felt we should put more money into the project.

I think that should be included as well.

Mr. WINN. Mr. Chairman, I just want to point out while we are debating about who we ought to have up here, we have some pretty high-paid Government witnesses who have been waiting to testify and I think we ought to proceed.

The CHAIRMAN. I think the point is well taken. If we can work out a time when Dr. Deutch can be here, I have no objection. I think we owe it to the Department of Energy to find out from them their position on the matter. And then within reason we could have Dr. Deutch or someone else who has a contrary view.

The CHAIRMAN. I would now like to recognize Dr. Gates.

Dr. Gates will be here to answer questions but not to testify.

We have Mr. Lochlin Caffey, director of the Clinch River breeder reactor project, who will make a statement on behalf of the Department of Energy.

STATEMENTS OF MAHLON GATES, ACTING ASSISTANT SECRETARY, NUCLEAR ENERGY, DEPARTMENT OF ENERGY, ACCOMPANIED BY LOCHLIN CAFFEY, DIRECTOR, CLINCH RIVER BREEDER REACTOR; PAUL SHLEMON, COUNSEL, DOE; WARREN BERGHOLZ, COUNSEL, DOE; JOHN KEARNEY, SENIOR VICE PRESIDENT, EDISON ELECTRIC INSTITUTE; CARL HOBELMAN, COUNSEL, BRC; AND J. DEXTER PEACH, DIRECTOR, ENERGY AND MINERALS DIVISION, GAO, ACCOMPANIED BY CLIFF FOWLER, SENIOR EVALUATOR, ENERGY AND MINERALS DIVISION, GAO

Mr. GATES. Mr. Chairman and members of the committee, it is an honor to be here before you today.

In response to your letter, sir, we understood the testimony today would be confined to questions and answers relative to termination costs, and you further requested we bring the most knowledgeable people. We brought Mr. Caffey, the project manager from Oak Ridge for the Clinch breeder reactor, and on my right is Mr. Jack Kearney, senior vice president of the Edison Electric Institute, and he is here at the request of the Project Management Corporation.

On his right is Mr. Carl Hobelman, counsel for the Breeder Reactor Corporation.

Inasmuch as the understanding that you and I seem to share in common was that we were to be responsive to questions relative to termination costs, there is no introductory or written testimony, Mr. Chairman. Therefore, we are subject to your questions.

The CHAIRMAN. I also would like to introduce Mr. Dexter Peach, General Accounting Office, Director of Energy and Minerals Division.

Mr. Peach, we are happy to have you here.

Mr. PEACH. I have with me today, Mr. Chairman, Mr. Cliff Fowler.

The CHAIRMAN. Do you have any opening comments to make?

Mr. PEACH. Yes, Mr. Chairman, we have a statement.

The CHAIRMAN. Very well. We will be glad to hear from you and then we will proceed as a panel.

Mr. PEACH. Mr. Chairman, my statement comes in the context of a number of reports that we have issued over the last few years dealing with the breeder reactor research program in general and the Clinch River breeder reactor in particular.

The two most recent reports were issued about 2 years ago in May and July 1979. Those two reports, as we were able to update them on Friday, May 8, form the principal basis of my statement today.

In our May 7, 1979 report we concluded that if the Congress chose to terminate Clinch River at the end of fiscal year 1979 the remaining Federal commitment would have been between \$152 million and \$350 million.¹ The lower figure represented the cost of meeting contractual obligations plus \$20 million for continuing selected design activities of value to the future fast breeder reactor program. The high figure, reflecting estimates by some industry groups, depended on the results of possible lawsuits against the Government for failing to complete the project.

¹ "The Clinch River Breeder Reactor—Should the Congress Continue to Fund It?" EMD-79-62, May 7, 1979.

Subsequently, in our July 10, 1979 report to the Energy Research and Production Subcommittee of this committee, we stated that if the Government had to refund industry's contributions to the Clinch River project, the termination costs would be still higher than our earlier estimate.²

We noted that as of September 30, 1979, industry's contributions would total \$102 million, but pointed out that the Government's liability to refund these contributions is unclear. Industry's view has been that its contributions must be refunded if Clinch River is not completed. The Government position at that point was that it would not have to refund these moneys. As we said in our July report, the issue of Government liability in case of project termination might have to be resolved in litigation.

Thus, we estimated that as of September 1979 the cost of terminating Clinch River could range from as low as \$152 million in contractual obligations and selected design work to as high as \$452 million, depending on the outcome of any termination-related litigation that might ensue.

On the afternoon of Thursday, May 7, we were asked to testify here today, and on Friday, May 8, we obtained DOE's most current estimate on the costs of terminating the Clinch River project and attempted to reconcile this estimate with the estimates we reported in 1979. I mention the dates to emphasize that the short time period did not permit us to prepare our own independent estimate or even to evaluate DOE's estimate.

DOE now estimates that if the project is terminated as of September 30, 1981, the cost may be between \$248.2 million and \$422 million, depending on how the termination is carried out. The variance is primarily due to the degree to which additional design work will be done on the project. If there is no additional design work done and the termination activity is limited to the preparation of a final engineering report, the cost could be about \$248.2 million. If the final design work is completed, developmental tasks needed to support a final design are done, and a final report on engineering design and development is issued, the termination costs will be about \$422 million. The major portion of the difference in these estimates is that the preparation of a final engineering report would cost about \$23.1 million, while the completion of all design work is estimated to cost about \$187.4 million.

The other costs for terminating the project are substantially the same for either method of termination. These are contractual obligations of about \$102.5 million; reimbursement of utility and industry contributions, if required, of about \$117.2 million; and a contingency cost of about \$5.4 million to \$10.5 million to cover unanticipated cost increases in the various termination activities. However, if final design is completed there will be an additional cost of about \$4.4 million to resolve generic issues that are still open with the Nuclear Regulatory Commission.

Further, we would like to note that as with the earlier estimates we provided, there may be additional termination costs involved if the utilities and private industry bring suit against the Government for damages they might have incurred in relying on the

² "Comments on the Administration's White Paper: 'The Clinch River Breeder Reactor Project—An End to the Impasse'," EMD-79-89, July 10, 1979.

Government's promise to use its best efforts to carry out the Clinch River project. Also, the estimate does not include an allowance for any reimbursement of interest on utility and industry contributions.

To put the potential termination costs in perspective, as of December 31, 1980, sunk costs in the Clinch River project totaled about \$1 billion and the estimated additional cost of completing the project is about \$2.2 billion, for a total cost of \$3.2 billion. I might add a thought to that, Mr. Chairman, that a little better than \$2.8 billion of the \$3.2 billion would be the Government's contribution, with the remaining contributions from utility interests.

Against this backdrop, Mr. Chairman, there are several points which our past work indicates the committee might wish to consider regarding termination of the Clinch River project. Specifically:

What is to follow if Clinch River is terminated? Will the large plant visualized in the recently completed conceptual design study be constructed? If not, what will substitute for Clinch River as the focus of the Nation's breeder reactor program, and what form will the program take?

Will the domestic industrial infrastructure be available when needed to design and fabricate components, and build the large plant at some future time?

Is it prudent to construct and operate a large breeder reactor on a utility grid without the benefit of intermediate scale-up?

What effect will termination of the Clinch River project have on utility confidence in the Federal Government's commitment to fast breeder reactor development and on possible utility financial participation in any future project?

On a broader note, Mr. Chairman, these questions raise the larger issue of the role of nuclear power as a long-term energy option. As we stated in our September 1980 report on the overall fast breeder research and development program, if the Congress wishes to maintain a nuclear option or if it wishes to commit to nuclear power as a long-term energy source, a breeder reactor—not necessarily Clinch River—should be constructed and operated to demonstrate the technology.¹ If Congress is unable to agree on an approach for preserving the breeder option or if it does not wish to do so, we believe it should consider terminating the breeder program. Once terminated, any future decision to restart the program could cost many years of development time and leave the United States with the possible alternative of purchasing breeder reactors from foreign sources if future energy developments indicate a need for the technology.

That concludes my statement, Mr. Chairman.

As I indicated, the dollar figures that I have provided today were obtained, as best we could, from DOE sources on Friday. We were not able to audit or verify those figures as such and if there would be a need for us to subsequently do such work for the committee we would be glad to assist you as best we could.

The CHAIRMAN. Thank you.

Mrs. SCHNEIDER. Mr. Chairman, I would like to register my concern with the testimony that has been submitted. As you initially introduced them you said the discussion would be based on termi-

¹ "U.S. Fast Breeder Reactor Program Needs Direction," EMD-80-81, September 22, 1980.

nation costs. I think the questions raised toward the end of the testimony, I think, are questions that you had indicated earlier are not to be discussed at this point.

Just for a point of clarification, I would like to raise that point again.

The CHAIRMAN. I think Mr. Peach indicated this, and I did want to limit our discussion to the termination of Clinch River.

We may go into other things when we mark up the bill, but the purpose of this was to determine primarily what the closeout costs might be on Clinch River. Possibly when the statement was prepared, Mr. Peach didn't know I was going to make my statement.

Of course we will stick with what our original intention was going to be.

Mr. LUJAN. I happen to think the comments are proper; in terminating a program and looking at the termination costs you have to take into consideration what other costs would be involved further on down the line, and that is exactly what Mr. Peach has done.

I don't find that those are out of line completely. How can you make a decision without looking further on down the line?

Mr. WEBER. Since I am not a member of the Subcommittee on Energy Research and Production, I am not aware of who testified before that subcommittee. Was testimony taken from any of these gentleman on behalf of the Clinch River project?

Mr. LUJAN. Surely.

Mr. WEBER. I would presume, then, the comments the gentleman has made or the case in favor of Clinch River remains a part of the record of the subcommittee and there is really no point in rehashing that.

The CHAIRMAN. Let me say, Mr. Lujan makes a good point. I think we have to consider that when we are marking up the bill.

Today we are trying to find out what actually would be the cost to the minute.

It is certainly a very valid question and it should be addressed, but I wanted to try today to limit the discussion to those matters relating to the termination of the project.

I would like to ask Mr. Caffey about two or three issues Mr. Peach mentioned. One was the termination design costs. Do you agree with the figures related in his statement?

Mr. CAFFEY. Yes, sir, I do.

The CHAIRMAN. Mr. Kearney, if no funds were authorized to be appropriated for the utility contribution, what in your opinion might occur in the range of costs that might be included by the Government?

Mr. KEARNEY. If there were no provisions made for the electric utility industry? I don't think I can respond to that properly, Mr. Chairman.

The gist of my statement was to talk about what would be the impact on the utility industry. I think these gentleman from the Department of Energy would be more appropriate to answer that question.

At the proper time I would just like to make a short statement.

The CHAIRMAN. I didn't realize you had a statement.

Mr. KEARNEY. At your convenience.

The CHAIRMAN. Please proceed.

Mr. KEARNEY. First of all, I would like to submit a statement for the record. I apologize we don't have it for you here today. But I only found out about this late Friday night.

The gist of the statement would be, first, to point out in a chronological way how the project was developed and indicate the fact that the electric utility industry was responding to a request from the Government to participate in the project.

We think that that is germane to discuss, even within the narrow focus that you have suggested, because I think that suggests why the utility industry is concerned with the termination and what we would feel is the impact on the industry as a result of the termination.

Having hopefully established that to your satisfaction, I will be indicating in the statement that a figure somewhere in the neighborhood of \$115 million has been contributed by the electric utility industry and that is both the investor-owned and noninvestor-owned segments of the industry, toward the project.

I believe that is a figure that the Department of Energy has suggested is the impact of the utility industry's contribution.

I would further point out that in our judgment that may not necessarily be the entire amount of money that may be at issue. It does not include any interest on those funds that the utility industry has given to the project. It does not include taking care of any services in kind which some utilities have made to the project. It does not include any of the windup costs for either BRC or PMC, after the end of year 1981.

While probably—as a matter of contractual arrangement—this is maybe not at issue, I would just like to call to the attention of the committee the fact that the termination of this project will have the detrimental effect on the utility industry in that continued financial investment that is required for nuclear power will undoubtedly be hurt.

Mr. OTTINGER. Will the chairman yield for a question?

The CHAIRMAN. When he gets through, we will ask all the witnesses to answer questions.

Mr. KEARNEY. That is all I have, Mr. Chairman.

The CHAIRMAN. There would be a provision whereby the utilities could go to the Court of Claims and establish some type of claim, would there not?

Mr. KEARNEY. That is my understanding, Mr. Chairman.

The CHAIRMAN. Is it your opinion we should include money for that without prejudicing either you or the Government?

Mr. KEARNEY. As long as you don't prejudice either of us, I think you should consider that because, as Mr. Lujan pointed out, you ought to look broadly at what the complications of a termination would be.

The CHAIRMAN. What other actions could be taken to reduce the overhead and administrative costs associated with termination? How could we make it as low as possible? Would that be the \$248.2 million that was mentioned by Mr. Peach?

Mr. CAFFEY. Mr. Chairman, I think about the only way we can improve upon that number by lessening it is to do a more studied

evaluation of the work which would have to be actually done to terminate the project.

This would entail an evaluation, in broader terms, estimating the amount of work which is now in process, the number of people engaged, the number of manufacturers, subcontracts involved, and whether or not the Government would be required to orderly and efficiently, wind up the project, including writing an official report. The lower number which Mr. Peach mentioned would bring together the value that has been gained in these 8 years of operating this project, including the several hundreds of millions of dollars of basic research and development that has gone into it.

Final reports have to be written. Though it seems quite large, at this stage the only way to reduce it would be by a more refined study of it.

The CHAIRMAN. Is that in fiscal year 1982 dollars or is that spread out over 3 years and also does that include the \$115 million contribution of the utilities?

Mr. CAFFEY. That is spread out over the three-year period, including a modest allowance of 8 percent per year for escalation, which we would like to see achieved.

It does include reimbursement to the utility industry and to the reactor manufacturers that have made contributions by the end of this year.

The CHAIRMAN. What is the rationale for that number, then, the \$115 million?

Mr. CAFFEY. The number of \$115 million, of which Mr. Kearney speaks, is an approximation. At the end of this year the utility direct contribution into the project expenditures through the project organization would be about \$113.3 million, 2nd through the reactor manufacturers, \$3.9 million, for a total of \$117.2 million.

The CHAIRMAN. In your opinion how is it no funds were appropriated for the utility contribution?

Mr. CAFFEY. In the letter Mr. Gates delivered to you today there is a footnote.

The CHAIRMAN. I would make the letter to me from Mr. Gates, a part of the record and there should be copies passed out to the members.

[The letter follows:]



Department of Energy
Washington, D.C. 20585

MAY 11 1981

Honorable Don Fuqua
Chairman, Committee on Science
and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

The Administration is committed to expeditious completion of the Clinch River Breeder Reactor Project (CRBRP) and has not developed any contingency plans for termination.

If HR 3146 as amended were passed and signed by the President, the Department would provide a formal termination plan within thirty days of enactment in accordance with the law.

This letter provides the Department's estimates and other information requested in your May 7, 1981, letter regarding termination of the CRBRP.

Conditions for termination are primarily addressed in the contracts themselves. These contracts and the obligations under them will be reviewed carefully by the Department if legislation directing termination is enacted. The four-party contract does not address refund of utility contributions. This issue will have to be discussed with the parties to the contract. Contracts with reactor manufacturers, component suppliers, and the constructor generally contain provisions for termination for the convenience of the Government.

The estimated costs of termination and the additional appropriation requirements are provided in the enclosure. The estimate is based on the assumption that legislation is enacted which authorizes the start of termination activities on October 1, 1981. The estimate for ongoing design activities is based on completion of essential elements of title II design.

Regarding procurements which should be completed for research and development purposes, the CRBRP prototype steam generator and the prototype pump are currently planned for delivery in FY 1981. The funding required to test these units is currently included in the base program plan and therefore is not included in the estimated termination costs.

In accordance with your request, Mr. Lochlin W. Caffey, Director of the CRBRP, will be available on May 11, 1981, to testify and discuss the information in the enclosure with the Committee on Science and Technology.

Sincerely,

Mahlon E. Gates

Mahlon E. Gates
Acting Assistant Secretary
for Nuclear Energy

Enclosure

CLINCH RIVER BREEDER REACTOR PLANT PROJECT
ESTIMATED COSTS OF TERMINATION EFFECTIVE OCTOBER 1, 1981^{1/}
COMPLETION OF FINAL DESIGN
(\$ IN MILLIONS)

	<u>TOTAL</u>
CLOSEOUT AND SETTLEMENT OF TERMINATED PROCUREMENTS (INCLUDES VENDOR MANAGEMENT COSTS)	\$ 31.5
COMPLETION OF FINAL DESIGN INCLUDING FINAL REPORT	187.4
RESOLUTION OF GENERIC ISSUES WITH NRC (EXCLUDES COSTS OF NRC STAFF AND SERVICES)	4.4
MANPOWER COST TO MANAGE SUBCONTRACTS TO BE COMPLETED, TERMINATION OF SUBCONTRACTS AND SETTLEMENT OF CLAIMS	34.9
PERSONNEL RELOCATIONS	3.9
PERSONNEL TERMINATIONS	11.7
REIMBURSEMENT OF UTILITY AND REACTOR MANUFACTURERS' CONTRIBUTIONS, IF REQUIRED ^{2/}	117.2
TERMINATION CONTINGENCY	<u>31.0</u>
TOTAL	<u>\$422.0^{3/}</u>

1/ ASSUMES PROJECT OFFICE AND CONTRACTORS CAN SUCCESSFULLY SETTLE TERMINATION CLAIMS BY SEPTEMBER 30, 1984.

2/ THERE IS NO PROVISION IN THE CONTRACTUAL ARRANGEMENTS FOR REFUND OF UTILITIES CONTRIBUTIONS. HOWEVER, THE CONTRIBUTORS HAVE CONSISTENTLY INSISTED THAT IF THE PROJECT WERE TERMINATED, THEY WOULD BE ENTITLED TO REIMBURSEMENT OF CONTRIBUTIONS AND WOULD SEEK LEGAL OR EQUITABLE RELIEF. THIS IS A VERY COMPLEX, COMPLICATED CONTRACTUAL SITUATION WHICH WOULD REQUIRE CAREFUL STUDY IF THE PROJECT WERE TERMINATED. PRUDENCE NECESSITATES PLANNING FOR POSSIBLE REIMBURSEMENT OF CONTRIBUTIONS.

3/ DOES NOT INCLUDE FABRICATION OR TESTING OF EQUIPMENT PROTOTYPES.

CRBRP FUNDING ANALYSIS
OCTOBER 1, 1981 TERMINATION
COMPLETION OF FINAL DESIGN
(\$ IN MILLIONS)

\$422.0
88.0
\$334.0

OUTLAYS REQUIRED^{1/}

LESS BUDGET AUTHORITY AVAILABLE FROM PRIOR APPROPRIATIONS^{2/}

ADDITIONAL BUDGET AUTHORITY REQUIRED FOR TERMINATION

1/ DOES NOT INCLUDE FABRICATION OR TESTING OF PROTOTYPES.

2/ BUDGET AUTHORITY AVAILABLE FROM FY 1980

FY 1981 BUDGET AUTHORITY APPROPRIATED TO DATE

ADDITIONAL FY 1981 APPROPRIATION REQUIRED

TOTAL BUDGET AUTHORITY EXPECTED TO BE AVAILABLE IN FY 1981

LESS FY 1981 OUTLAYS

BUDGET AUTHORITY AVAILABLE FOR TERMINATION FROM PRIOR APPROPRIATIONS

\$102.7
122.0
50.0
\$274.7
186.7
\$ 88.0

Mr. CAFFEY. In the attachment to that letter there is a table. This table contains a footnote with respect to this reimbursement matter to the utility industry, which recognizes no contractual provision for reimbursement to the industry in the event of termination of the project. But because of the legal documents concerning how that might come out, we believe that prudently, in estimating the cost of termination, that number must be considered as a potential liability.

The CHAIRMAN. Mr. Peach, would you speak to the same point?

Mr. PEACH. Mr. Chairman, the figure we had with regard to reimbursement of contributions was \$117.2 million. Reimbursement has been an issue for some time. When we did our work 2 or 3 years ago the Government maintained it had no reimbursement liability. Now, however, I think the DOE representative indicated it is unclear as to what the reimbursement obligation, if any, will be. It may be subject to litigation.

The CHAIRMAN. How do we act in a responsible fashion—I asked the question earlier, I think of Mr. Kearney—in taking into account the possibility of a claim by the utility companies?

Mr. PEACH. I cannot answer that question, to be quite honest. My not being a lawyer and not wanting to prejudice the chairman either way, I wouldn't want to give you an answer on that because I could be in error.

Mr. OTTINGER. Does Mr. Gates have counsel here?

Mr. GATES. I don't know whether he is prepared to respond to that issue.

Mr. BERGHOLZ. I can't speak for the general counsel himself, but it is my view that we would have to study exactly how to treat a proposition for such a potential or contingent liability to insure there would be no prejudice either to the Government's case or to the case of the utilities.

The CHAIRMAN. How do you arrive, Mr. Caffey, at this? You have on the chart \$422 million. How is that broken down by fiscal years, particularly fiscal years 1982, 1983, and 1984.

Mr. CAFFEY. Mr. Chairman, in a total way for fiscal year 1982, the costs are estimated to be \$280.3 million. For fiscal year 1983, \$98 million. For fiscal year 1984, \$43.7 million.

The CHAIRMAN. Now, could you break the \$282 million out? That is for fiscal year 1982.

Mr. CAFFEY. Mr. Chairman, with elements to be composed this way: for the closeout and settlement of terminated procurements, \$23.6 million.

For the function of completion of final design, including the final report, \$100 million.

That is a round number, but we have supporting figures for that.

The resolution of generic issues with NRC, not including NRC staff and services, \$2 million.

The cost to manage the subcontracts that are to be completed, to terminate subcontracts, and to settle claims, \$18 million.

For relocation of personnel, \$1.2 million.

For termination of personnel, \$1.7 million.

That line for the reimbursement of manufacturers and utilities we have spoken of.

Contingencies for termination, \$16.6. This represents 5 percent of the cost of completion of final design and 25 percent of the other tasks not including the reimbursement factor.

The CHAIRMAN. What is the rationale for completion of the final design?

Mr. CAFFEY. We actually say completion of final design, but that does not mean 100 percent completion. There would be a considerable amount of detailed information which will not yet be on the design drawings, or in the design specification. That information which we would get from hardware vendors if we were to place additional hardware contracts.

But we believe that having reached the stage of completion of design that we have so far, which is about 82 percent to 83 percent, that it would be quite worthwhile to bring the design that much further along so you could look at it as an integrated whole design and be able then to understand what you have done for the benefit of further program development.

There are many analyses which yet remain to be done as the design is completed and we would not be able to finish those design analyses. Those analyses in great part do extend to the support of a further program development and plan.

It is a matter of being able to wrap it up rather than stopping where it is and getting more benefit from the more than \$1 billion already spent to date.

The CHAIRMAN. Mr. Winn?

Mr. WINN. Mr. Caffey, on that last answer where you mention completion of the final design including the final report, maybe I misunderstood your answer there, but how far down the line—what are we talking about, a final design, date-wise?

Mr. CAFFEY. Our current expectation, going the way we are, would have us, by the end of fiscal year 1982, about 92 percent complete in total design activity.

Mr. WINN. In the last part of 1982?

Mr. CAFFEY. By the end of fiscal year 1982.

Mr. WINN. Now, how much more—the final report, how long does that take?

Mr. CAFFEY. We visualize here the final report as a somewhat different sort of paper than in the lower cost estimate that Mr. Peach alluded to. He would look at it more as the design which we would have completed with some integrated comprehensive systems analysis and with comprehensive documents to constitute the final report.

In the lower case we would have to set out deliberately on a course to construct a report which would pull together a great deal of design and research information.

Here the final report would be essentially the culmination of the design which we had done, and expressing for the benefit of his industry why it was done that way.

Mr. WINN. So the \$187.4 million could be a bottom dollar and not top?

Mr. CAFFEY. It could be a lower figure, yes, sir.

Mr. WINN. It could be lower?

Mr. CAFFEY. Because the actual amount of design remaining yet to be done is about \$70 million or \$80 million on top of that. That we would not do.

Mr. WINN. Mr. Kearney, the Rural Electric Associations are on the Hill today. They have come to my office and made it quite clear this would affect them. Is that your opinion, that some of the Rural Electric Associations would be affected if the utilities didn't have this option?

Mr. KEARNEY. That's correct, Mr. Chairman. No. 1, there is a financial impact on them as contributors to the project just as there are to municipals and investor-owned companies; the total industry at the request of the Government got behind the Clinch River reactor, so to that extent it would impact on them.

Second, in response to your question, I think they were probably referring to the fact that they think as we do, that the breeder reactor is necessary for the future and that this is a part of the overall program.

Mr. WINN. I don't know who can answer this question. Probably Mr. Caffey.

As of May 1—first let me say the figures you are quoting and using are present, up-to-date figures as of last Thursday and Friday; is that right, the best of your knowledge, your latest figures available?

Mr. CAFFEY. Yes, sir. These estimates which we are showing you are estimates as of the end of fiscal year 1981. They are giving consideration to where we have actually arrived, last week.

Mr. WINN. Including that, then, do you have figures there that would show what part as of May 1, what are the total funds that are committed?

Mr. CAFFEY. Mr. Winn, I do not have a total-funds-committed figure with me.

Mr. WINN. Do you know how much has been spent on the project as of today?

Mr. CAFFEY. Yes, sir. Spent on the project as of May 1 is approximately \$1,060,000,000.

Mr. WINN. You have given us the estimated cost of completion of the project, beyond the committed and spent funds?

Mr. CAFFEY. What we have given is the estimated cost as of the end of this current fiscal year. That would include the next 4 months of this fiscal year as costs yet to be expended, but not reflected in the estimates beyond.

Mr. WINN. At the present time what is the estimated construction completion date of the project based on where you are at the present time?

Mr. CAFFEY. Our current schedule and associated cost estimates are looking at an initial criticality date, as we call it, of February 1990, which is the beginning of a 5 year, 7 months period of operation of the plant.

Mr. WINN. Have you any record of how many contracts have been executed, how many are now active, and how many are uncompleted?

Mr. CAFFEY. Yes, sir. We now have about 125 active contracts and subcontracts through all the reactor manufacturers and their subcontractors and suppliers.

I don't know how many we have finished at that lower tier supply level. It might be 15; it might be 30. I just don't know. I can supply that figure to you.

Mr. WINN. Would you supply that?

[The information follows:]

In reference to the above, the following is supplied for the record: 9,705 contracts, subcontracts, and purchase orders have been completed.

Mr. WINN. How many are being negotiated? Would there be a difference between 15, 20 and 120?

Mr. CAFFEY. We have now about 125 active contracts with work in process.

Mr. WINN. How far completed is their work? There are some in a process of being negotiated? Do you know how much money we are talking about?

Mr. CAFFEY. Those contracts heretofore engaging in design information and holding up on fabrication while the future of the project is being deliberated. I will have to get that.

Mr. WINN. If you would.

[The information follows:]

In reference to the above, the following is supplied for the record: The estimated value of contracts currently under negotiation is \$88.6 million, of which \$15.8 million is planned to be obligated by September 30, 1981.

Mr. WINN. I would like to know about the employment table. How many employees? I show 3,788.

Mr. CAFFEY. Yes, sir. That figure includes those in the project management organization at Oak Ridge and all of our contractors and vendors across the country.

That figure is some months old, though it is not far off the current market. We can get you a more current figure.

Mr. WINN. It is pretty close, though?

Mr. CAFFEY. Yes, sir.

Mr. WINN. How many DOE employees are assigned full-time to the project?

Mr. CAFFEY. At the present time we have 26.

Mr. WINN. If this project were terminated, Mr. Caffey, what amount of salvage? Have you looked into the possibility or have you gotten that far in the termination plan of what the amount of salvage could be anticipated?

Mr. CAFFEY. At one time it was estimated that the hardware delivered to the project, or about to be delivered this year, would be on the order of perhaps \$100 million worth of components of some useful or remotely useful value.

In terms of salvage value, if much of that becomes scrap, rather than useful components, that would be conjectural and we would have to determine it.

By the end of this fiscal year, we will have about \$200 million, or \$210 million worth of delivered components and prototype hardware.

Mr. WINN. Does DOE have a termination plan?

Mr. CAFFEY. We do not have a termination plan at this time.

Mr. WINN. How long would it take to provide a termination team and plan to the committee?

Mr. CAFFEY. I think that the department, as expressed in the letter indicates that we would provide it within 30 days of enact-

ment of a law which terminated the project. The department is not now actively working on a termination plan.

Mr. WINN. The first paragraph of the letter indicates they have not developed a contingency plan for termination.

Mr. CAFFEY. That is right.

Mr. WINN. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Ottinger?

Mr. OTTINGER. Thank you, Mr. Chairman.

In the figures that you gave for the fiscal year 1982 portion of the \$248.2 million, I have those added up to \$162.7 million.

On the next page of your presentation you indicate there is budget authority available through prior appropriation of \$88 million, and I wonder if you deducted that from fiscal year 1982 moneys, whether it would be appropriate for us to do that.

You allocated \$23.6 million to closeout costs for fiscal year 1982, \$100 million for completing design, \$2 million for generic, and so forth. I don't know whether my total is accurate. Whatever the total is, do you think it is appropriate for us to take into account the \$88 million appropriated?

Mr. CAFFEY. Yes, sir. As you would see on the second page of the attachment to Mr. Gates' letter, we do give consideration to the availability of funds at the end of this fiscal year from prior appropriations, \$88 million.

Mr. OTTINGER. There is also a possibility in the supplemental appropriations to be considered later this week, \$50 million for fiscal year 1981 funds.

Mr. CAFFEY. That is also considered in that table in footnote 2, the additional \$50 million for this fiscal year.

Mr. OTTINGER. It would be appropriate for us to subtract that. I have a number of questions.

When this project was originally presented to us, one of the claims made for Clinch River was a good deal of the equipment that was being procured could in fact be used for a future breeder program.

Do you have any breakdown of how much would be reusable?

Mr. CAFFEY. You mean if this project was terminated, what would be useful to other parts of the program at a later time?

Mr. OTTINGER. Yes.

Mr. CAFFEY. That could conceivably be as much as \$100 million, which would be essentially the prototype steam generator and the prototype new design of the primary sodium pump, which together amount to something over \$90 million.

Mr. OTTINGER. I am advised that the utilities have paid in the Breeder Reactor Corporation—I don't know whether it has been turned over to the corporation—a sum that was not turned over to the project. I am told that could be in the neighborhood of \$50 million.

Do you have an exact figure on that?

Mr. CAFFEY. I believe the utility industry has supplied to the Project Management Corporation for holding and investing at interest until actually used in the project about \$125 million.

Mr. OTTINGER. Is it \$125 million not used yet?

Mr. CAFFEY. No, sir. Of that \$125 million, part of it is in the bank and as of right now about \$111 million has been spent. Which

would become the \$113.3 million by the end of this fiscal year that is in the table.

Mr. OTTINGER. I am trying to determine if there is a sum available in termination payments, a sum the utilities have turned in but is in the hands of the Project Management Corporation.

Mr. CAFFEY. The portion which has not been paid to the project through the Project Management Corporation is still remaining in the bank accounts at interest. That would be the raw difference, plus the accumulated interest. I don't know at the moment what that might be.

Mr. OTTINGER. Can you supply that and give us all ball park figures of what it is?

Mr. CAFFEY. I think it is on the order of between \$30 million and \$40 million, but I am not sure, Mr. Ottinger, as of this moment.

Mr. OTTINGER. The information I got is \$50 million. That information would be helpful.

[The information follows:]

In reference to the above, the following is supplied for the record: the amount of cash and investments on hand with the Project Management Corporation as of April 30, 1981, is \$52.6 million. This amount includes \$34.5 million which has been earned on utility industry contributions.

Mr. OTTINGER. I am also told by Mr. Deutch at the time President Carter was planning to eliminate this project, the utilities had indicated that they had recouped 100 percent of their contributions to this project already, through their own rate reimbursement process.

That is to say, they were allowed by their various State commissions to include this as part of their rate base, and it would be fully reimbursed, and at that point they were perfectly willing to have their contribution to this project count toward a more advanced project.

Could you give us information as to how much of the contribution from the utilities—how much of the moneys that were contributed have actually been recouped by the utilities? In a court of law, of course, there would be a question of mitigation damage.

Mr. CAFFEY. I can't answer that because the theory is a new one to me. I haven't heard that idea expressed. I have no information on that.

Mr. KEARNEY. Mr. Ottinger, I am not completely sure I understand your question.

Mr. OTTINGER. I understand there is a contribution by the individual utilities which were permitted by the utility commissions to be counted as a legitimate expenditure, and they were reimbursed through their rate base.

Mr. CAFFEY. I wouldn't say it is reimbursed. It is counted as an expense in deciding what should be an equitable rate, and, to that extent, what you say is correct. Except in one or two instances, I think some commissions have questioned whether they should do that.

It is a legitimate expense, and I am not sure about the thrust of your question beyond that.

Mr. OTTINGER. The thrust of my question goes to the question of whether there is any liability at all remaining. You can assume

there is a liability, but if in fact the utilities have already gotten that money back, then the real liability becomes zero.

Mr. KEARNEY. Well, it is a breach of contract, and I think to that extent it is a liability because we contracted not to build half a plant, we contracted to build a full plant and get our information out of the design, construction, and operation of the plant, with the termination of that, then we are not getting our money's worth.

That is why I think the utility industry would be very concerned and feel that that money should come back to BRC for use in possibly other research and development projects, as is called for by the contract between BRC and the individual participating utilities.

Mr. OTTINGER. There is a termination clause in the contract, of course, as there is in all Government contracts. The contracts can be terminated at any time at the convenience of the Government.

Mr. KEARNEY. I would like counsel to respond to that, if I may, Mr. Ottinger.

Mr. HOBELMAN. It is my understanding of the contract that that is not correct. This is not an ordinary Government procurement contract which provides for termination clauses at the convenience of the Government.

There are specified termination proceedings and criteria, but it is our position that they can not be relied upon by the Government because the Government's actions since 1977 have in fact acted as a breach of contract; and, therefore, there is a liability that extends from the Government to the utility industry, as represented by the contracting parties under the various project arrangements.

It is true that most of the utility expenditures have been recovered in rate proceedings before their individual State utility commissions, but it is the feeling of the BRC-PMC organizations that they represent trustees, if you will, the directors of those corporations, for their constituent members, which are the utility companies, and that the funds which have been used for research and development thus far in this project have not been used in accordance with the contract.

Unless the project goes forward, the benefits of those contracts won't accrue to the utilities and their customers and, therefore, there is a liability extending to the utilities.

Mr. OTTINGER. Isn't it accurate that when these discussions were last had, the utilities weren't prepared to make their contribution?

Mr. HOBELMAN. I have not heard those discussions at any of the meetings of the BRC, Mr. Ottinger. I don't think that is correct. Let me say this.

I think the first responsibility of the utility organizations—and this has been recognized in their discussions—is to negotiate with the Department of Energy to try to reach an accommodation, here, which would be beneficial to their customers without necessarily resorting to suit.

I would certainly hope a suit was not required. That is an absolute last resort in our mind.

The difficulty is that as trustees for their customers, the utilities can't sit back and do nothing, any more than any of us could, if we were party to a contract we felt was breached.

Mr. KEARNEY. Could I just add, Mr. Ottinger, I too am not aware of any discussions, as you have portrayed, that might have happened as to the utility industry indicating they would be in favor of using those funds for a different type of reactor.

We have always proceeded on the basis that the Government was going to proceed with Clinch River and it was only between 1977 and now that that seems not to be so.

Mr. OTTINGER. You have \$88 million, which is in the pipeline, and you have a retail value of \$100 million in the plant. You have some figure that is paid in that has not been turned over to the project which may be \$30, \$40 or \$50 million.

Then you have the question of whether or not the utilities are owed anything by the Government, today. The \$113 million. If you add all those up, you more than wipe out the claim at the present time.

Mr. CAFFEY. Mr. Chairman, might I address a point there.

The salvage value Mr. Winn asked about is really scrap metal value. There is no resale value to this equipment that we can see, this hardware we have delivered, because it is plant-specific or designed for research and development programs sponsored by and paid for by the Federal Government.

Mr. OTTINGER. You said \$100 million worth of equipment would be usable in other breeder projects.

Mr. CAFFEY. Yes, sir, but it is not a matter of getting money back for it from some other appropriations.

Mr. OTTINGER. It depends on what we might decide to do with regard to other breeder projects.

Mr. LUJAN. It seems incredible to me that we sit here and discuss \$117 million paid in by utilities in a good faith agreement. We are now arguing about whether we ought to give it back to them.

We didn't keep up our end of the bargain. It is no fault of the utilities that the project hasn't been taken to completion. Here we are saying, "Well, you already put in \$117 million, and we are not going to give it back to you," and in addition you have \$50 million that you have sitting there because of the possibility that this program might be going through to completion, and we are going to take that away from them, too.

I can't understand the rationale there.

Another thing I really can't understand is how the utilities got themselves into this mess. If I go into a contract, if I put in \$10, let alone \$350 million, how am I going to get it back if the purpose for which I put it in doesn't materialize?

Do you mean to tell me in the whole contract there isn't any way for the return of this money if the project is not going to completion? Is the contract silent on it?

I have seen provisions dealing with how you terminate the project, the failure to get Government license and things like that, but in the whole contract doesn't it say whether the Government returns the money?

Mr. GATES. I don't think, Mr. Lujan, there are any written provisions which make a prescription one way or the other on this issue. I think it would be for the committee to determine an appropriate

amount. The moral or legalisms involved in repayment should be left up to subsequent negotiations between the parties concerned.

Mr. HOBELMAN. I would agree with that statement of Mr. Gates, and I would like to say two other things.

First, there is no expressed provision in the contract which says, "If this contract ends, the utilities will get their money back."

I think that is an indication of a situation which existed in 1972 through 1976, and which is part of the utilities' concern, that there was a bit of a primrose path laid down by the Government for the organizations involved.

The utilities walked right down it. Unfortunately, the red carpet that was laid out may be pulled out, and that is the utilities' concern, and in this forum of consideration I think it is an equitable concern.

We have not reached the legal concern, today and I hope we don't have to, because this committee couldn't resolve it. It would be the Court of Claims.

On the \$50 million Mr. Ottinger mentioned, I don't know what that number is. I do know in 1977, when the preceding administration first decided not to go forward with Clinch River, there was a \$12-million item that was in the cash flow which normally would have been paid by the Project Management Corporation to DOE—or at that time it might have been ERDA—but in any event, that \$12 million was withheld because the utilities said the breach had occurred.

Interest has accrued on those funds, but I wouldn't consider those funds which are additional utility funds part of a sum to be deducted from the total amount, which might be equitably their due.

Mr. LUJAN. Why do we have to go on with completing the AE portion of the project? Is that what your \$187 million is in there for?

Mr. CAFFEY. Mr. Lujan, we have four principal design contractors on this project—the manufacturers and the one architect engineer. Their work is closely interrelated because the reactor manufacturers are responsible for systems which generate heat and transport heat. The architect engineer is responsible for the buildings, the structures that house all those systems, supporting them, supplying heating and cooling and electric power to them, removing the radioactive gases and cleaning them up, and disposing of them.

So, there is a very close interrelationship between all four design contractors. To cut off the AE would then deprive you of the opportunity to really finish the work with respect to design by the three reactor manufacturers.

Mr. LUJAN. If we are not going to finish the project—I include the entire thing as AE—why do we have to move on in fiscal year 1982 to complete those plans if in fact the program is terminated?

Mr. CAFFEY. It is a matter of evaluating how far you believe you really should go in order to get the most benefit from the \$1.06 billion, and more that the Government and the utility industry have invested in project expenditures so far. How you best bring that to a head.

Mr. LUJAN. If you finish them, could you perhaps sell them to France or Japan or another party who wants to use breeders?

Mr. CAFFEY. Not unless they want to build a plant just like this one. The idea is, there comes some sensible point where you would stop design, you would leave gaps and vacancies on your design drawings and specifications, but you want to determine the best way to pull the whole design together, write a final analysis for the whole thing, and put it on the shelf for design of future programs in this country or abroad.

Mr. LUJAN. You say you had 3,788 employees. How many of those would have to be let go?

Mr. CAFFEY. About 2,200 of those are engaged in hardware manufacturing and almost all those would be terminated with 2 weeks' notice and put out. We have about 1,500 people engaged in the project, 1,600 including the contractor, but he would be summarily terminated, too, except for maintaining storage for us for those components currently in storage.

About 1,500 people are engaged in project management and design contract work. That is the number which we are really talking about to finish design work and then wrap up and negotiate out all the subcontracts and terminate the project.

Mr. LUJAN. You haven't included termination costs, unemployment compensation, and those sorts of things in your calculations.

Mr. CAFFEY. In the cost of terminating the hardware manufacturers, whatever costs they have there in order to terminate their employees, if they cannot use them somewhere else in other work, are estimated in the cost of terminating the subcontracts, the line which is in the chart there.

Mr. LUJAN. You include such things as unemployment and so forth?

Mr. CAFFEY. Just that roundhouse way. We are saying of the total amount of work outstanding at the end of this fiscal year in the hands of hardware manufacturers, we estimate that our liability for actually closing those out would be a certain proportion of the total amount of the commitment.

The CHAIRMAN. The time of the gentleman has expired.

I might point out that I have been giving everybody a liberal 7 minutes.

Mr. Harkin?

Mr. HARKIN. I would like to follow up on the design plan cost. Do I understand that you are claiming, Mr. Caffey, there will be a \$100-million design plan cost for fiscal year 1982? I had \$100 million.

Mr. CAFFEY. What that number represents, Mr. Harkin, is money for the reactor manufacturers, the architect engineer, the laboratories, and the management of that work. It comes to \$100 million.

Mr. HARKIN. As I understand, there is money in the basic breeder program targeted for testing Clinch River components. Obviously if they are terminated and if they are only worth salvage cost and there is money in the base program to test these components, could that money be reprogramed?

Mr. CAFFEY. No, sir. The plan is that the base program will conduct and pay for the test of the prototype steam generator and the primary sodium pump.

The test of the secondary control rods and drive systems is a part of the project cost. It is included in the \$100 million figure of which

I spoke. If the project were terminated that hardware would not be salvaged. It would continue in its test program as part of the base program.

That is, the prototype steam generator, the prototype primary pump, and you would add to that, also, the secondary control rods, which are to be tested in fiscal year 1982, as an additional cost to the base program of about \$12 million.

Mr. HARKIN. At termination, you would go ahead with testing the component?

Mr. CAFFEY. Yes, sir. That has been planned, even when we first started talking about termination 4 years ago. These components are unique and represent advances in the technology in this country and abroad. It should be very worthwhile to go ahead and finish the testing that had been planned for them as a part of the base program.

Mr. OTTINGER. Would the gentleman yield?

Mr. HARKIN. Yes.

Mr. OTTINGER. Mr. Deutch says if you were going to build a more advanced breeder reactor that the designs for Clinch River would not be usable. Therefore he says in his letter, from a technical viewpoint, "These resources would be better spent if allocated to the design of a new breeder research and development plan." It is his assertion that finishing the designs on the contract plant would be money wasted.

Do you believe these plans would be usable in a future breeder if they were completed?

Mr. CAFFEY. If we talk about the plant's specific design elements, obviously they would not be used in some other plants. If we talk about generic design concepts, design concepts such as for the reactor core and the treatment of the heat coming out of the reactor, they are being used in the design which was just finished and reported to this committee at the end of March this year.

The concept for the prototype steam generator for this plant is one of several concepts being evaluated for the next plant.

Mr. OTTINGER. \$187 million, how much of it is conceptual and how much is specific?

Mr. CAFFEY. I am sorry?

Mr. OTTINGER. You have requested \$187.4 million for finishing the design, how much of it is conceptual and how much is site specific?

Mr. CAFFEY. I don't have that kind of a breakout right here, Mr. Ottinger.

Mr. HARKIN. Going back to 1976, when we had hearings on this, at that time, as I understand it, there was enough design work that was completed at the time to begin the licensing procedure.

Eventually much more design work has been completed since then. What exactly needs to be known about the design that has not been known when licensing began? Is this really crucial design work or is it trim work?

We have most of that design work done. Should we go ahead as part of the cost of termination with a completion of the design? They had enough design work done to license in 1976. Certainly more has been done since then, so what more remains to be done except for some trim work or something?

Mr. CAFFEY. You can begin licensing at an early stage of design, as we did in 1976. Then you cannot consummate licensing, though, until you have finished your design. We are not in the termination mode talking about consummating licensing.

There are a number of aspects of the whole licensing matter which we never did resolve with the regulatory commission staff, some of which we and they also believe are generic issues, and which it will be worthwhile for the base program personnel to continue to thrash out with them either as a part of continuing work on this project or transferring over to them for further funding these activities that they are not now funded for.

The beginning of licensing, though, is only working from a certain design stage. We should have been working with the NRC all this time to validate what they view as licensable.

We believe it is although there are certain items on which we think we should work with them and that is where we have \$4.4 million in this estimate for such purpose.

Mr. HARKIN. I want to refer to the paybacks to utilities. I understand you do not want to get into the legal basis. You have made the point that it is going to be a point of legal contention between utilities and the Government as to whether or not that money has to be paid back.

Without getting into that, I have heard at least three different figures this morning on how much is obligated to the utilities. I have heard 113.2, 115, and 117.2.

Why is it so difficult to get an accurate figure on the amount of utilities' contributions that have been contributed so far?

Mr. CAFFEY. Mr. Harkin, it is in the record.

Mr. HARKIN. Why did we have three different figures thrown at us?

Mr. CAFFEY. Because we had three different people speaking, working from different definitions of what they were talking about.

From the record, at the end of this fiscal year there would be about \$113.3 million paid in by the utilities into the project management, the project office, and used in the project—paid by them and reimbursed in the sense that their costs are reimbursed in the writeoff, as their contribution to the project.

Reactor manufacturers have contributed \$3.9 million. The sum of the two is \$117.2 million, as shown in the attachment to the letter to the chairman, which lists them together as \$117.2 million. That is the figure Mr. Peach was using, \$117.2 million, and he didn't use the reactor manufacturers' contribution as a part of it.

Mr. HARKIN. They would have to be repaid?

Mr. CAFFEY. If they repaid the utility industry, the contract terms also require that the reactor manufacturer be repaid.

What Mr. Kearney was referring to was an approximation. He didn't have the specific figure as a forecast as of the end of this fiscal year. He is talking about \$115 million.

Mr. KEARNEY. Could I call to your attention again in the prepared statement, which I wish to submit for the record, is the observation, as I said in my opening statement, that there may be other costs which we don't believe that DOE has taken into consideration, such as, as I indicated, services in kind that some utilities

have donated to the project as a possible question of windup costs for both BRC and PMC.

The approximate figure that I gave I think is a lower figure. As I indicated, we felt there would be interest due on that money as a matter of equity and that would also increase that figure.

Mr. HARKIN. I don't wish to belabor that issue any longer, but at some point I do intend to get into the issue, then, of what happened in the mid-1970's with the change in the contractual obligation that the private industries, utilities, in changing contractual agreements under the program, with regard to their obligations toward completion of the breeder reactor.

There is considerable data and evidence. I got into that back in 1976, I believe it was, and 1977, as to the change in the total obligations to be incurred by the private sector of the country as opposed to how much the Government was going to put up.

I believe there was every indication at that time that because of that change, the utilities and others, certainly had no right to claim after that that in case of termination they would have to be paid back because I think, as Mr. Ottinger pointed out, they did recoup those moneys in terms of rate increases and other methods.

The CHAIRMAN. The time of the gentleman has expired.

Mrs. Bouquard?

Mrs. BOUQUARD. Thank you very much, Mr. Chairman.

I think the potential termination cost should include the benefit we expect in the way of revenues from the plant. Have any of you gentlemen addressed the issue of loss of benefits associated with terminating Clinch River?

Mr. GATES. You don't mean a dollar value, Mrs. Bouquard. I think the loss to the effort of this administration in emphasizing the nuclear option is exceedingly great. I recognize that as a very subjective statement, but one of the objectives of this administration has been to re-establish the confidence of the public and of industry in the light water reactor program and continuing that into fast breeder technology.

And, coincident with that, the Clinch River breeder is viewed as the next upward step in progressing in the fast breeder technology. To eliminate that step would be to eliminate a large part of the movement in the direction we would want to go.

Mrs. BOUQUARD. With regard to potential revenues, dollar amount that will not be collected, the loss of taxpayer dollars for electric energy generated.

Mr. CAFFEY. In the planned operating lifetime of the plant in terms of fiscal year 1982 dollars—this is not allowing for any escalation of the value of revenue—the total revenue is estimated to be about \$2.3 billion revenue, and then subtracting operating costs and fuel costs from the same year dollars, 1982 dollars, for a net gain of about \$700 million.

Mrs. BOUQUARD. \$700 million over the lifetime?

Mr. CAFFEY. Expressed in fiscal year 1982 dollars.

Mrs. BOUQUARD. When reflecting on the \$117.2 million contribution by utilities, Mr. Kearney, does this reflect the interest on these contributions that might be demanded by utilities?

Mr. KEARNEY. No, they do not.

Mrs. BOUQUARD. Would the utilities seek damages beyond reimbursements here?

Mr. KEARNEY. As I indicated in my opening remarks, we feel as a matter of equity there should be interest payable on that money that had been paid into the project which through no fault of our own had been terminated.

Mrs. BOUQUARD. Could you prepare an assessment of all those contingent liabilities?

Mr. KEARNEY. Yes, we would. In some instances, though, it would be hard to put a dollar figure on them at this point. It may take some time to do that. As I have indicated, \$113 point whatever it is is in our judgment the floor of what would be due the utility industry if this project were terminated.

Mrs. BOUQUARD. Would you anticipate that the utilities would seek to remove their contribution from the rate base?

Mr. KEARNEY. These moneys were collected by the utilities and given to BRC on the basis that they were research and development funds and, as such, they have been allowed in most instances as operating expenses.

If the moneys were returned to the Breeder Reactor Corporation as trustee for the utilities, the contractual arrangements between BRC and the participating plants require that these funds then be utilized in some other research and development to be decided upon by BRC.

It would not be appropriate or possible to return them back to the companies.

Mrs. BOUQUARD. Mr. Gates, what impact would this termination have on DOE access to technology to be developed by the contractor, that is, useful on another breeder program? What access would you have to this technology?

Mr. GATES. I believe, Mrs. Bouquard, it would be quite inhibitive to progress. Not solely progress on a technological basis, but in my view, without a tremendous loss in the values to be received from knowing that you can do that which you think you can do, and gain experience thereby.

The next step in breeder technology would be a large jump beyond CRBR. Three times. CRBR is a three times jump over FFTF. To take the CRBR step out of that progression would make us proceed in a ninefold jump, which is very large indeed, and I think we would feel very uncomfortable, as I believe the French are beginning to feel uncomfortable about their large jump.

To us it is a progression in the right sequence and at the right scale, from one demonstration to another.

Mrs. BOUQUARD. Mr. Caffey, what is the likelihood utilities will participate in future projects such as a 5-year development plan?

Mr. CAFFEY. I feel the spokesman for the utility industry should consider that one.

Mr. KEARNEY. I think it would be very difficult to expect the utility industry to cooperate on such a gigantic—or a project similar to this, if this project were terminated at this time, and particularly if there were some question about whether or not in all equity the funds that they contributed were not somehow returned to the BRC. It is very difficult to expect a cooperative arrangement under such circumstances.

Mrs. BOUQUARD. What would be the impact of this termination on FBR cooperative agreements with our foreign governments to date?

Mr. GATES. I find that hard to respond to, Mrs. Bouquard, merely because of ignorance on my part. I have not acquired sufficient familiarity with the views of the several foreign countries with which I know we have agreements.

Mrs. BOUQUARD. Mr. Gates, would you provide this information?

Mr. GATES. I would be glad to.

[The information follows:]

Question. What would be the impact of termination of the CRBRP on FBR cooperative agreements with foreign governments to date?

Answer. The CRBRP Project represents a logical growth step in the U.S. Department of Energy's planned progression to demonstrate the Fast Breeder Reactor. For the past five years, our technology development programs have been directed at providing needed design developments for the CRBRP. Our ability to continue with balanced, mutually beneficial bilateral exchanges is based on the high value placed by foreign governments on the CRBRP developmental and operating data and experience. Termination of the CRBRP lessens our credibility as a reliable FBR developer and exchange partner and could hinder our ability to negotiate for foreign LMFB technology.

Mrs. BOUQUARD. Going back to a question we touched on briefly earlier, additional costs will be required to test components at full power if we have the termination of CRBR. Will we have to construct major facilities, Mr. Caffey, to test these components?

Mr. CAFFEY. In the base program, as I said earlier, we are going to be testing the prototype steam generator and pump, and it is also contemplated larger components for larger plants would be fabricated and tested as a part of that program.

Mrs. BOUQUARD. But not at full power, though, Mr. Caffey?

Mr. CAFFEY. There is no way we could economically test at full power, even the Clinch River components. It is not contemplated. It becomes enormously expensive.

The CHAIRMAN. Mr. Weber?

Mr. WEBER. Mr. Chairman, let me say first of all I am a little concerned about the direction of both the testimony and some of the questioning up to this point. I presume that the rationale for this hearing today was to determine the minimum cost at which we could close out the Clinch River breeder reactor program.

I presume we have gone through all the debates pro and con on that and the committee has made a decision on the merits of the program last week, and today we are to determine what is the minimum possible amount of money the Government has to spend to gracefully terminate this program.

It seems to me that much of the testimony that had been presented and some lines of questioning that have been pursued are not in terms of pursuing that objective.

Rather, it appears to me, and I must say this, we are seeing an attempt to construct, first of all, a rationale against the deauthorization of the Clinch River project and failing that, to create a case for the maximum possible cost of closing it out and to demonstrate that all of that cost must be immediately incurred.

Now, I think we have to get a little bit away from that line of questioning, and I would like to try and return again to what I thought was the business for today—what is the minimum amount of money we can spend and when does it have to be spent.

First of all, I would like to ask a little more about a question that has been pursued by Mr. Ottinger, about the completion of final design and including filing a report and the \$187 million.

None of that is required to be spent, is it, Mr. Caffey? There is no contractual, legal, binding reason why the Federal Government has to spend any of that money?

Mr. CAFFEY. Mr. Weber, that money in there is for the completion of final design, which is not really completion of final design, as I said earlier. It is short by many tens of millions of dollars for completion of final design. It is for the purpose of gaining as much benefit as possible from the work done on this project so far.

Mr. WEBER. I understand that, Mr. Caffey, but my point is, we are not here debating the merits of that. That is a separate question that the committee might consider.

My question is, must the Government legally or contractually concur in that expenditure? Without regard to the merits of doing it, must we do it?

Mr. CAFFEY. I would have to look at that to the dollar to answer that question honestly, Mr. Weber.

Mr. WEBER. It seems to me the answer is clearly no. The committee may decide there is another program for that, but that is not a termination cost of Clinch River, in my judgment.

There is another question regarding the investment the utilities have made up to this point. I understand some of the companies involved have benefited from tax credits. Is that true?

Mr. HOBELMAN. To the best of my knowledge, that is not true, since they are not owners of the project.

Mr. WEBER. None have benefited from tax credits in any way?

Mr. CAFFEY. I am not qualified to speak to that. That is within the utility industry accounting practices.

Mr. OTTINGER. Would the gentleman yield for a question on the design costs?

Mr. WEBER. I yield.

Mr. OTTINGER. How much of the \$100 million that you have put in to complete the design goes toward testing these pumps that you referred to as something that ought to be done. Do you know that?

Mr. CAFFEY. Yes, sir, there is \$12 million for the testing of the—not the pump, but the secondary control rod system. The testing of the pump and the steam generator are covered in the base program.

Mr. OTTINGER. They are covered in the base program. So you can test the items you plan to, for only \$12 million, or without any additional moneys at all? Do we consider in the question the control rods and the sodium pump? Then you said you need program dollars for the control rods, and the money for the pumps is already included in the base program?

Mr. CAFFEY. That is correct.

Mr. OTTINGER. You have asked for \$2 million in fiscal year 1982 for NRC proceedings. Mr. Peach testified that those moneys for resolving engineering issues in the Nuclear Regulatory Commission are only needed, and I quote, if final design is completed. Is it accurate to say if final design is not completed, then the \$4.4 million total before the NRC, the \$2 million for fiscal year 1982, is not needed?

Mr. CAFFEY. I think Mr. Peach's frame of reference might be somewhat different from ours in this case. If you were not going to complete final design, and looking at a 1977, 1978, 1979 evaluation of termination of the project, obviously you do not need to pursue issues with the NRC. If you are going to resolve generic issues in the framework of the Clinch River design then it is an element of completing a certain amount of this design for being able to resolve, though, its generic issues with NRC.

Mr. WEBER. Mr. Chairman, a further question that occurs to me is this: Besides deciding the amount of the obligations of the Government in closing out this project, since we are authorizing only for fiscal year 1982, as I understand it, the timing in which we would be forced to incur those costs is of great importance to us, and yet we don't really have that information.

I am not going to continue my questioning any further, but I wonder if the Chair could ask the witnesses to try and also provide us with a timetable under which some of these costs would be incurred.

It appears to me many of them will not be incurred within the period of the authorizing legislation we are discussing.

The CHAIRMAN. I think that has been provided. It is over a 3-year period, fiscal year 1982, 1983, and 1984. He gave us a breakdown—82 funds that they recommended be included.

Mr. WEBER. One final question for clarification: Mr. Kearney, am I to understand, I believe in questioning by Mr. Ottinger, you indicated some of the utility costs had been included in the rate base, and yet you felt the Government would nonetheless have to reimburse the utilities for those costs. I am not sure I understand that.

Mr. KEARNEY. I think as a matter of equity, and I think Mr. Hobelman can speak to the contractual obligations, they were provided to provide service to the industry or to the ratepayers of each individual company, and that was to have a completed design, construction, and operation of the plant. So I don't think it is correct to say, just because the expenses have been in the rate base, that the ratepayer has obtained benefit from them. They will not obtain benefit until the whole project is completed. But up until then, we are not obtaining any benefit.

Mr. WOLPE. However, if the utilities, in fact, have incorporated this amount of money in the rate base, and if now the Federal Government, in addition to reimbursed utilities for the direct payment they had contributed to this project, would not the utilities be collecting twice for the same expenditure, first from the ratepayer and second the Federal Government?

Mr. KEARNEY. There are two different points there. One of the reasons we are suggesting they be reimbursed is the matter of contractual arrangement. I would like counsel to speak to that.

Mr. WOLPE. That is not my question. I just want to understand the mathematics. Would you not be, in effect, reimbursed twice for the same project?

Mr. HOBELMAN. That is not correct. This contract with the utility industry is no different from any other contract you might have for an R. & D. contract or coal supply. Utility customers pay for coal supply, but if a coal supplier breaches a contract, then there is a

damage issuing to the utility company on a breach-of-contract claim, and that money, when collected, goes to reduce further rate increases.

Essentially, the benefit that the utility customer would achieve from a reimbursement of these funds is twofold: One, the moneys will be put to good use in an R. & D. program of benefit to the electric utility industry and all aspects of the electric utilities industry, and, second, that expenditure will reduce the need to acquire additional revenues.

Mr. GREGG. Under the BRC agreement, you will not be able to distribute that money back to your ratepayers if you do get it back?

Mr. KEARNEY. That is correct.

Mr. GREGG. Then it is not going to the ratepayers, but will stay with the utility companies, and you will be getting double payment, because the ratepayers pay it initially and the Government pays it back to you, and you will take it out of some other R. & D. project. Is that correct?

Mr. KEARNEY. I think the first part of what you said that it won't be going back to the ratepayers' account, but as far as the benefits of that money is concerned, it is going to the ratepayers.

Mr. GREGG. I happen to disagree with you. I don't believe that is so at all.

Mrs. SCHNEIDER. I, too, am inclined to agree with Mr. Gregg, and I think that this is an issue whereby the ratepayer would really stand to lose twice, and I think there probably is a decision that ultimately will be made by the Department of Justice. I think the Department of Justice will really have the final word on this particular point.

Is it true that the modified contract would permit the utilities to terminate their own involvement in the project if they did not approve of a major change in design to meet the NRC requirements?

Mr. HOBELMAN. There is a procedure in the contract for that purpose. I think the ultimate decision lies in the Secretary of Energy's office.

Mrs. SCHNEIDER. But there is a provision in this contract if the contract is to be upheld, would it not be left to the discretion, then, of the Secretary of Energy, but rather to the discretion of the interpretation of the contract?

Mr. HOBELMAN. I have not checked that provision of the contract over the weekend, but I believe the final word lies in the Office of the Secretary of Energy after an appeals procedure which is spelled out in the contract which would involve input by the utilities.

Mrs. SCHNEIDER. I would just like to point out that there are contract provisions for that.

Mr. ERTEL. Would the gentlewoman yield on that point for a moment?

Mrs. SCHNEIDER. Yes, sir.

Mr. ERTEL. I am reading from hearings before the Joint Committee on Atomic Energy, 1976, explaining the modified contract. Somehow I think we have gotten very far afield because it says, and I quote: "The modified contract would limit the liability of

utilities to the total of the contributions due and payable to the date of project termination."

You have to pay through the date of project termination. It isn't a question of whether you get anything back. It is a question of how much you have to continue to pay up until the time of the project termination.

I can show you other sections on the same thing. I just don't see where you even find a legal basis for any argument that you are entitled to money back. The question is how much more do you owe.

Mr. HARKIN. I would also point out in that same hearing that Mr. Cunningham was testifying, and when counsel said this is just like any other type of contractual arrangements the Government makes with any other type of a supplier of business or services, I would just respond to the counsel with Mr. Cunningham's own words: "The project is a jointly funded cooperative industry/Government effort. It is not just a typical Government contract for goods and services."

That is underlined and emphasized in his testimony.

Mrs. SCHNEIDER. I would appreciate it if you would respond for the record. I think I, too, have documentation from the record, and we would appreciate something in writing on that.

Once again, I think legal counsel would be in a position to most appropriately interpret the lines of the contract.

Mrs. SCHNEIDER. My reading of the contract indicates five parties must approve any obligations made under the contract. These five parties include the Department of Energy, the Breeder Reactor Corporation, the Project Management Corporation, TVA, and Commonwealth Edison. Have these five parties signed on—Mr. Peach, I guess you might answer this—do you find they have signed on to all of the outstanding obligations listed by the Department of Energy under its termination cost?

Mr. PEACH. I am not aware of the answer to that question, Mrs. Schneider. I don't know whether anyone else is.

Mrs. SCHNEIDER. I would appreciate an answer in writing to this committee on whether all five have signed on.

Mr. PEACH. We will be glad to investigate that.

[The information follows:]

The multiparty contract apparently does not require that each of the four parties approve each contractual obligation. Our understanding of the relevant provisions (Paragraphs 4.1, 4.1.7, 4.1.12, 4.1.16.5, and 4.1.17) leads us to conclude that ERDA (whose responsibilities under the contract have devolved upon the Department of Energy by virtue of the Department of Energy Organization Act) has the authority to incur obligations under the contract without the need for the concurrence or approval of the other signatory parties—TVA, Commonwealth Edison, and the Project Management Corporation. We note, however, that disputes between the four parties are to be resolved in accordance with contract paragraph 2.3.5 which provides a mechanism for addressing such matters.

Mrs. SCHNEIDER. I would also like to know what was the previous administration's estimates for termination costs, and what kind of repayment schedule did the previous administration assume. You have some of those figures available now?

Mr. KEARNEY. We don't.

Mr. CAFFEY. We would have to furnish those for the record, Mrs. Schneider.

[The information follows:]

In reference to the above, the following is supplied for the record:

Previous estimates of CRBRP termination costs are summarized below. These estimates were based on differing assumptions as to the effective start date of termination and the degree to which selected design activities would be completed. Also, these estimates do not include any funding for the reimbursement, if required, of utility industry and reactor manufacturers' contributions.

(In millions of dollars)

Date of estimate	Assumed termination start date	Total estimate	Estimated fiscal year outlay requirements
Jan. 5, 1981	Apr. 1, 1981	143.2	Fiscal year 1981—68.9 Fiscal year 1982—61.2 Fiscal year 1983—13.1
Mar. 31, 1980	Oct. 1, 1980	143.5	Fiscal year 1981—101.8 Fiscal year 1982—36.6 Fiscal year 1983—5.1
Feb. 22, 1980	Oct. 1, 1980	138.7	Fiscal year 1981—95.8 Fiscal year 1982—37.8 Fiscal year 1983—5.1
Jan. 26, 1979	Oct. 1, 1979	151.1	Fiscal year 1980—114.3 Fiscal year 1981—31.8 Fiscal year 1982—5.0
Nov. 16, 1978	Apr. 1, 1979	160.6	Fiscal year 1979—74.8 Fiscal year 1980—75.4 Fiscal year 1981—10.4
June 26, 1978	Oct. 1, 1978	155.8	Fiscal year 1979—116.2 Fiscal year 1980—35.5 Fiscal year 1981—4.1
Mar. 17, 1978	June 1, 1978	197.6	Fiscal year 1978—39.4 Fiscal year 1979—122.2 Fiscal year 1980—36.0
Apr. 5, 1977	July 1, 1977	154.5	Fiscal year 1977—21.5 Fiscal year 1978—75.2 Fiscal year 1979—34.6 Fiscal year 1980—23.0

Mrs. SCHNEIDER. Being a Republican and in wholehearted support of the President's efforts to execute thrift in determining our future, whether it be in energy or whatever, I think it is very important that you gentlemen from the Department of Energy understand that what decisions are put forward here, or what your cost estimates are, will be precedent setting, and I think that we will be seeing a number of termination proposals coming forward, whether from this committee or other committees, and so I encourage you to act with an aura of conservatism in coming forward with those numbers which you will ultimately supply.

With regard to figures put forth in a benefit analysis as to the termination of the Clinch River breeder reactor, it seems to me there are a number of things that have not even been considered if the project were to continue.

In 1977, the GAO issued a letter in response to a congressional request for information about the costs of delaying appropriations for the Clinch River Breeder Reactor. The GAO letter examined the costs that would be added to completion of Clinch River if the licensing process were suspended or delayed, and if the plant had to be relocated to meet NRC safety requirements. It is my understanding that, we have had a de facto delay in the licensing process. Please explain to the committee how much the licensing and

relocation factors discussed on page 10 of the GAO letter would add to project completion costs today.

Mr. PEACH. In response to a request from the then Vice chairman of the congressional Joint Committee on Atomic Energy, Senator Henry Jackson and Senator Howard Baker, we issued a report on various aspects of a controversial proposal for a budget deferral (D77-58) affecting the Clinch River facility. Among other things, our report, issued on June 23, 1977, discussed the additional costs that would be incurred by the Clinch River project if it was terminated in fiscal year 1977, as the President had proposed, and then restarted at a later date.

In this context, the report discussed the time delays and cost increases that could be expected under the three assumptions alluded to in Representative Schneider's question. These are estimates of the schedule and cost increases for the Clinch River plant assuming:

One, the licensing process with the Nuclear Regulatory Commission could begin where it was stopped;

Two, the licensing process with the Nuclear Regulatory Commission would have to begin with a new license application; and,

Three, the Clinch River plant would have to be relocated to another site in the United States.

Page 10 of our report, a copy of which is attached shows that for assumption 1 it was estimated the plant would have been delayed 1 to 1½ years and would cost an additional \$346 million; for assumption 2 the plant would have been delayed 3 years and would cost an additional \$546 million; and, for assumption 3 the plant would be delayed 5 to 6 years and would cost an additional \$1.1 to \$1.3 billion. It should be noted that all of these cost were stated in 1977 dollars and would have to be revised upward if comparable figures were obtained for 1981.

Mrs. SCHNEIDER. Those things have not even been brought up for discussion, and I feel no previous discussion of costs or benefit determination have been totally complete.

Another question I would like to ask is, insofar as my reading of the modified contract is concerned, it indicates all the utility commitments through the calendar year of termination will revert to DOE to help meet these close-out costs. Is this correct according to your interpretation of the modified contract?

Mr. HOBELMAN. No, that is not correct under the circumstances which exist today. If the contract had terminated in its normal course of business some years down the road, following operations and testing, that would have been the case; but we feel right now the Government is in breach and it cannot enforce utility commitments under the contract. Utilities have not had a commitment to pay since 1976 and we don't believe they have a commitment at this time.

Mrs. SCHNEIDER. Insofar as the utility contributions have been held in escrow for the past several years, I was wondering if the contract requires that the utilities make their contributions in annual payments of \$25 million.

Could you tell the committee the dates of the last annual payments?

Mr. HOBELMAN. I would have to check on that and provide the information, but I presume it would be year-end 1976.

Mrs. SCHNEIDER. I would very much appreciate a clarification of that in writing to the committee.

[The information appears in Appendix beginning on page 87.]

The CHAIRMAN. Mr. Wolpe?

Mr. WOLPE. Thank you, Mr. Chairman.

I would like to pursue that question. It appears there are three separate issues here. The total cost of the program is what we are trying to establish, things that are mandated by law or contractual obligation.

The second is really identifying the resources that are out there in one form or another that are creditable toward those closing-out costs that could not be deducted from the total closeout figure. The third is the amounts—identifying the amounts that must be authorized as a matter of law or contractual obligation within fiscal year 1982 authorization legislation.

I want to pursue for a moment the question of total cost and closeout. I want to come back to the issue of the utility—not only the question of what utilities have paid into the project up to this point, but also the question of the utility obligation.

I want to read rather briefly from a statement of Dr. Robert S. Seamans, Jr., an ERDA statement made to the Joint Atomic Energy Committee in April 1976, regarding the modified contract that was entered into at that point, and I quote:

In negotiating the proposed arrangements our basic intent was to make the minimum necessary changes in the existing contract. The purpose of these revisions was principally to recognize that ERDA and not the utilities will now make the fundamental decisions affecting project management. One consequence of this decision required a change in utility liability in the event that the government should decide to initiate termination of the project prior to its completion. The existing contractor provisions would have committed the utility to continue to contribute funds to the project at a rate of \$25 million per year, even after the government had terminated. We could find no basis in equity to continue to insist on this arrangement. Accordingly, we agreed that in the event of project termination, the utility contribution would be limited to the amount of funding contributed at the point of termination. It should be noted utilities have already contributed over \$100 million to the project.

Now, following up on the question just asked by the gentlewoman from Rhode Island, is there no one at the table who knows whether or not the utilities have made the \$25 million annual payment they were obligated to make under the terms of the revised contracts up to and since 1976?

Mr. HOBELMAN. Mr. Congressman, it is the utilities' position those obligations no longer adhere to the utility industry to pay in additional funds after the Government initially breached its contract in early 1977.

Therefore, the last payment was made either at year-end 1976 or early in 1977.

Mr. WOLPE. If I may, I would like to read at this point, then, from a section of that actual contract: The revised program justification data arrangement No. 77-106, February 1975. This appears at section 4(g):

Respective obligations of utility contributors will be limited to the amount provided for in their utility contribution agreements provided that upon termination prior to completion of the project their liability at any given time shall be limited to

the total amount of contributed cash on hand plus accrued interest, if any, such sums due but unpaid less PMC closeout settlement costs.

Mr. HOBELMAN. All this assumes a termination in accord with the provision of the agreement and not a termination resulting substantially from breach of contract. In dealing with individual utility contributions, the utilities as individuals have a contractual right to stop payment in the event that the project terminated for various criteria set forth in the contract.

Mr. WOLPE. I think the point I am trying to establish is simply the point really that the gentleman from Pennsylvania made earlier, which is that the real question may not be so much what is due the utilities by way of reimbursement, but what the utilities owe to the Federal Government for the failure to maintain the \$25 million annual contributions. Is that at least not an open, legal question?

Mr. CAFFEY. Mr. Wolpe, the contracts do not require the contributions be made by the Breeder Reactor Corporation to the Federal Government in the amount of \$25 million a year. Rather, each year the Federal Government, ERDA, DOE, will determine what the budget is for that year and advise PMC of what it is expected to contribute to the project for that year from whatever funds PMC may have collected through the Breeder Reactor Corp. up to that time.

Since 1977, the Breeder Reactor Corporation Board of Directors has held that it should not call on the member companies of the Breeder Reactor Corporation for their annual contribution and PMC has said that it will continue to participate with its people in the project and pay its people and an overhead share of the project, but nothing further. Both of these have been done on the basis that they held before a judge that the Federal Government had breached the contract and they were willing to continue but not continue on the original terms. That is the distinguishing feature, I think.

Mr. WOLPE. To clarify that further, you are saying that the utilities did not make the \$20 million payment to BRC, BRC did not even collect that sum?

Mr. CAFFEY. That is correct.

Mr. WOLPE. As of what year?

Mr. CAFFEY. I believe it was in 1977 that the Breeder Reactor Corporation Board passed that resolution and decided not to make the annual December call for contributions. They have not relieved the member corporations of the liability for cancellation, but it is there as a potential. If the project were to go forward for fiscal year 1982 appropriations, and went forward, then we anticipate the Breeder Reactor Corporation would call for contributions.

Mr. OTTINGER. Do you think it would be useful to have how much actually was contributed each year by the utilities to the Breeder Reactor Corporation? Do you have that?

Mr. CAFFEY. Yes, sir. It is approximately \$25 million. We can give you the precise number.

[The information follows:]

In reference to the above, the following is supplied for the record: The cash which was contributed each year by the utilities to the Breeder Reactor Corporation is as follows:

[In millions]

Calendar year	Annual amount	Cumulative amount
1972.....	\$24.0	\$24.0
1973.....	24.5	48.5
1974.....	24.7	73.2
1975.....	28.1	101.3
1976.....	26.0	127.3

Mr. WOLPE. Earlier, a member of the staff of this committee indicated there is a sum of money sitting in an escrow account. I take it, then, that is not an accurate description of the situation at all.

Mr. CAFFEY. Only to the extent that the member-utility companies of the Breeder Reactor Corporation have altogether paid more into the Breeder Reactor Corporation, which transferred it to PMC for investment, pending payment into the project. The difference, \$113.3 million, that is in the table here, and I believe \$125 million and a fraction, has been held in a bank account and interest has been accumulated.

Mr. WOLPE. What is the judgment of the members of the committee—is there anything in law or in contractual obligations that would require something larger, say, than \$20 million as this year's installment toward the closing-out costs? I use \$20 million because that was the specific figure embodied in the amendment that has already passed this committee. Is there anything in statute or under contractual obligation that is not going to have to be litigated at some length that would require a payment larger than \$20 million to be incorporated into the DOE 1982 authorization bill?

Mr. HOBELMAN. Does the question relate to utilities?

Mr. WOLPE. I would be more interested in knowing the reaction of the Government. I sense the inclinations of the utility interests.

Mr. CAFFEY. I am having difficulty grasping the import of that. You refer to something already included in the amendment at a \$20 million figure, and I haven't seen that in the amendment.

Mr. WOLPE. I am returning to the third of the three separate questions that I think are before the committee. First, what is the total cost of closeout.

Second, what can be credited toward those closeout costs; and

Finally, this is the point I am focusing on right now—what amount must this committee incorporate into the DOE 1982 authorization bill?

We have incorporated already a \$20 million sum. That was the amount that the language of the amendment passed last week provided for. I have not heard any testimony whatever to suggest that is an inappropriate sum.

Mr. CAFFEY. I have not seen such language in any such amendment. The only amendment I have seen didn't have the dollar figure in it.

Mr. WOLPE. If you don't like that particular number, is there another number you would prefer?

Mr. CAFFEY. It depends entirely on what is the objective, I believe, of what the committee would like to get out of the termination of the project in terms of either a final report of termination

or completion of further tests and a final report, or doing certain additional design work in order to dissolve generic issues with the NRC, or whatever. It depends on what the committee would like to see in terms of its expectations of termination.

Mr. WOLPE. My understanding is if we were to not include final design work—we are talking about a reduction of \$187.4 million—if we have no reimbursement for utilities on the theory they have already recovered through their rate base, that in another \$117.2 million reduction, that would yield a total dollar savings of \$304.6, just in terms of the figures presented by the Department of Energy termination, yielding a total of \$117.4 million, assuming validity of the remainder of the costs submitted by the Project. The question I am asking right now, of this \$117.4 million, why is it their intention to require more than \$20 million of that sum to be reimbursed or to be incorporated into this year's 1982 DOE authorization bill?

Mr. PEACH. I haven't a figure I can give you, Mr. Wolpe. Just adding to what Mr. Caffey said, in listening to the discussion here, I would suggest there are several areas that would have to be focused in on, depending on the direction you want to take.

If you look at the figure for the design work, it can be broken down into many different pieces and some judgment can be made as to whether you want to complete all of that design work that is contemplated or some portion of the design work. I am sure there are various components you can decide on. You can make a judgment as to whether you even want a final engineering report. It depends on what you want to get out of the investment that has already been made. You could look at existing contracts with respect to any potential for renegotiating the obligations that exist and, again, I am not sure of what kind of provisions may exist, but I think there are a lot of questions that would have to be answered in getting at the question of minimizing the contractual obligations you are dealing with. It depends also on what you want to do with the work done so far.

Mr. WOLPE. I appreciate the response. I think it is clear, if the committee chooses to, in its own judgment, it can always add money. The question we are trying to establish in this hearing—at least as I understood the scope and mandate of this particular hearing—is, what is the minimum cost that has to be incorporated into this particular authorization legislation for this particular authorization we are considering, and I have yet to hear a single suggestion that there is any mandate involved or in contract that would require more than the \$20 million figure incorporated into the amendment already passed.

Mr. ERTEL. I will follow up on that last question just for a moment.

When I get in a contract action and I want to get out, my objective is to get out as cheaply and quickly as possible. How cheap can the U.S. Government get out with the objective of getting out as cheaply and quickly as possible out of this contract? That is the question. How much?

Mr. GATES. I think the answer to that, Mr. Ertel, depends upon decisions which cannot yet be made. I believe the caveat that I put on the first page of the enclosure to my letter to the chairman,

with respect to the \$117 million about which Mr. Wolpe spoke, demonstrates that that complex issue——

Mr. ERTEL. May I interrupt? One hundred seventeen million dollars is the amount you say is in contention with the utilities. We know one thing for a fact, that if that becomes a litigable issue, it has to be at least 4 years off to get that resolved, or 3, or 2. Therefore, in 1982, we don't even have to consider that. We may have to consider it in 1983 or 1984.

Mr. GATES. That is true.

Mr. ERTEL. I assume that in 1982 you are never going to resolve that issue, not if I know lawyers.

Mr. GATES. I think the likelihood of that extending on for a number of years is positive.

Mr. ERTEL. So we eliminate that at least in 1982.

Now, if we want to get out as cheaply as we can and as quickly as we can by terminating the project, tomorrow, how much will it cost us for 1982? We have eliminated one figure. How much more can we eliminate?

Mr. GATES. I would like to respond for the record, Mr. Ertel, for this particular reason: We have been very affirmative and positive in our thoughts that the Clinch River breeder reactor would continue, and the contingency termination plans have not been made. Therefore, I think we need a little more time to answer that question.

I understand the question, and I think it means—I think what you said was, close it at the minimum cost at the earliest possible time without regard to the prudence of that action.

Mr. ERTEL. I think that is a judgment we would make. We are asking you for the quickest and cleanest way out, and what it would cost in the year 1982, the year 1983, and the year 1984?

Mr. GATES. I understand the question.

[The information follows:]

Question: How cheaply can the CRBRP Project be terminated if the Government wants to get out as quickly and as cheaply as possible?

Answer. The estimated cost of terminating the CRBRP Project, assuming start of termination October 1, 1981, and no further design or report activities, is \$101.9 million. Details of this estimate are provided in the attachment. This does not include any funding for reimbursement of utilities and reactor manufacturers' contributions, if required. The estimated amount of these contributions, as of September 30, 1981, is \$117.2 million.

The estimate is based on the sole criterion of terminating at minimum additional cost and does not provide for the completion of selected design activities of generic benefit to the LMFBR program.

CRBRP funding analysis for October 1, 1981, termination assuming no further design and no report activities

[In millions]

	<i>Funding</i>
Outlays required	\$101.9
Less B/A available from prior appropriations*	88.0
Additional B/A required for termination	13.9
B/A available from fiscal year 1980	102.7
Fiscal year 1981 B/A appropriated to date	122.0
Additional fiscal year 1981 B/A required	50.0

	<i>Funding</i>
Total B/A expected to be available in fiscal year 1981.....	274.7
Less fiscal year 1981 outlays.....	186.7

B/A available for termination from prior appropriations 88.0

CRBRP termination outlays for October 1, 1981, termination assuming no further design and no report activities

[In millions]

	<i>Outlays</i>
Close out and settlement of terminated procurements (Includes vendor management cost).....	\$31.5
Manpower cost to manage subcontracts to be completed, terminate subcontracts, and settle claims.....	34.9
Personnel relocations.....	3.9
Personnel terminations.....	11.2
Termination contingency.....	20.4
Total.....	*101.9

*Does not include reimbursement of utilities or reactor manufacturer contributions, if required. Estimated contributions as of September 30, 1981, are \$113.3 million from utilities and \$3.9 million from reactor manufacturers.

Mr. ERTEL. A second question I have is, the utility industry, when they indicate that they could anticipate a termination of this contract, I have some real question with that because I have been reading the contract, and I have been reading the committee reports.

Section 11 of the contract says termination. It says "despite the best efforts of TVA and PMC" and this is under the termination provisions and what is the cause for termination. It provides: "there continues to exist for 6 months a revocation, suspension, or loss of right to proceed under any necessary permit, license, authorization—or approval, and the project is seriously delayed or hindered thereby."

This committee is making an authorization. If we, in fact, decide not to authorize proceeding with this project, that fits within that clause. Now, it seems to me if that was inserted in the contract—it has been talked about for a long period of time—it is certainly something contemplated when this contract was entered into, the failure of this committee to authorize continuance of that contract. And if it proceeds for 6 months, then how can the utility industry argue that in fact they are surprised? They had to know this was a yearly authorization. I can take you through the entire contract, show you each and every thing throughout the contract where it is specified that you have to go to TVA and someone must go to Congress to ask for this and use best efforts, but you have to fully understand this Congress may not give you the authorization.

Mrs. BOUQUARD. This is not an annual authorization?

Mr. ERTEL. This is a 1-year authorization we are making at this point. We are not authorizing them to go forward at this point in any way, shape, or form. If it continues for 6 months, that is a breach.

There is another section which says that in different terminology: "Any necessary governmental permit, license, authorization or approval required for construction." And you had to come back to the U.S. Congress for permission for construction under the contract. Do any of you have a comment on that?

Mr. HOBELMAN. The authorizations referred to have not been achieved in prior years because prior representatives at DOE did not undertake their obligations under the contract to use their best efforts to push the contract and the project forward to completion.

One of the reasons we are here today and one of the reasons an additional \$850 million has been added to the cost of this project is that delay. In fact, that is the principal reason for it.

We therefore take the position that the obligations of the Government were not met in 1977 and 1978 and in subsequent years, and that therefore the contract was breached and therefore equitably and legally, and I hope here we are talking equitably today, is the responsibility on the Government to make the utilities whole and thereby provide the benefits of this contract in another fashion to their customers.

Mr. ERTEL. I think we want to talk both legally and equitably. If we have been in breach for 3 years, why haven't you so found?

Mr. HOBELMAN. The utility industry has stood by in hopes this project would go forward and has constantly urged the project forward and the moneys that have been held with money accruing in interest would be available.

Mr. ERTEL. In other words, you have been waiving your termination rights under the contract?

Mr. HOBELMAN. Not the termination rights—the rights to sue. The statute of limitation runs until 1983.

Mr. ERTEL. Your termination language says you can terminate within 6 months and you haven't done that.

Is there any provision in the contract to put those funds in escrow?

Mr. HOBELMAN. No; there is not.

Mr. ERTEL. Is there any provision in the contract for you to withhold funds?

Mr. HOBELMAN. There is no provision in the contract, but the contract was breached and any party to a contract that is breached may suspend its own performance. That is basic.

Mr. ERTEL. That terminates it; doesn't it?

Mr. HOBELMAN. Not necessarily. The contract may be held in suspension.

Mr. ERTEL. I see no provision for that here.

Mr. HOBELMAN. That is underlying law.

Mr. ERTEL. Under termination liability it provides; because the utilities agree—and this was in the modification—to relinquish management and control of the project to ERDA, which is now, of course, taken over by DOE, they understandably want to limit their financial exposure in case of action taken by ERDA, over which they have no control, and we can find no equity to further payment of the utility question in the event of early project termination.

So you can, in fact, terminate your payment in the event the Government has early project termination. That is it. There is no provision that goes further and says you get the money back. There is no provision that we reimburse you at early project termination.

You now come in and say we want to be made whole under the contract we negotiated in good faith. Now you say, equitably you ought to give us our money back.

I wonder if you had terminated under the provisions of this, would you have said to the Government we are quite willing to put up the rest of the money we owe?

Mr. HOBELMAN. We don't believe the termination criteria provided in that contract in 1976 have been met. The contract has been breached.

Mr. ERTEL. It says that a breach is a termination. I agree with you it has been breached. It has been in breach for some period of time, and it will be in breach, in fact, if we deauthorize the project and it comes under the termination provisions, and they come into activation at that point.

Mr. SHAMANSKY. Mr. Shlemon, I would be grateful if you would tell me the legal entity of the Clinch River breeder reactor project?

Mr. SHLEMON. It is a combination of organizations acting together.

Mr. SHAMANSKY. What do you call it? What is your governing statute?

Mr. SHLEMON. The governing statute is, I think, Public Law 91-273, which authorizes a heterogeneous project.

Mr. SHAMANSKY. And you would describe it in law-school terms as what kind of a legal entity?

Mr. SHLEMON. The most I could say is it is a cooperative undertaking among several parties.

Mr. SHAMANSKY. Then, Mr. Shlemon, to continue this: You are listed here as being under the Department of Energy. What I have been hearing is not from the Department of Energy, but this non-governmental project, or whatever it is, which is certainly not the Department of Energy.

Mr. SHLEMON. You have been hearing a representative of the Department of Energy, who is the Director of the Clinch River breeder reactor project.

Mr. SHAMANSKY. I also know that the senior vice president is also the senior vice president of the Edison Electric Institute.

Mr. SHLEMON. No, sir.

Mr. SHAMANSKY. Mr. Kearney?

Mr. SHLEMON. Yes. A different individual. I was speaking about Mr. Caffey.

Mr. SHAMANSKY. I am taking Mr. Kearney as senior vice president of Edison Electric Institute. Clearly, there is a conflict of interest in his two jobs in this context.

Mr. KEARNEY. May I respond to that?

Mr. SHAMANSKY. Yes; surely.

Mr. KEARNEY. I think this witness list is in error if it lists me under the Department of Energy, which it certainly does, because I am not representing the Department of Energy, nor am I a member of the Department of Energy.

Mr. SHAMANSKY. And your testimony certainly doesn't make you sound like you are; I agree with you.

It shows here the Department of Energy.

Mr. KEARNEY. I did not see the witness list before it was handed to me. Otherwise, I would have corrected it.

The CHAIRMAN. The gentleman is correct. Mr. Kearney should not be in and way implied as an employee of the Department of Energy. We asked the Department of Energy to provide us the best

possible people who could answer the questions that might come up. Because industry is a participant through the Edison Electric Institute, they did invite Mr. Kearney.

Mr. ERTEL. The Chairman illustrates the difficulty I am having with the testimony this afternoon. All of these witnesses have a conflict of interest. We have nobody representing the Government at the Department of Energy.

The CHAIRMAN. We do have Mr. Gates, who is Acting Assistant Secretary.

Mr. SHAMANSKY. I don't have him on my witness list.

Mr. GATES. Mr. Caffey is a Government employee and Project Manager for the Department of Energy for the Clinch River breeder reactor.

Mr. SHAMANSKY. I understand, sir, but he is described on my witness list as a Director of the Clinch River breeder reactor project, which is the usual base that has a lot of different interests in it. I haven't gotten any testimony from somebody who isn't involved who hasn't an ax to grind on behalf of the Clinch River breeder reactor.

Mr. Kearney keeps talking about equity. I want to know—as a lawyer, I want to know about legal liability. I am a stockholder in American Electric Power. I am a stockholder in Edison, and I want to cheer Mr. Kearney along in his capacity as senior vice president of Edison Electric Institute, but clearly there is a conflict when he presumes to talk about the Clinch River breeder reactor as a member trying to tell me what the Government's obligation is.

Mr. SHLEMON. That is a mistake. There is no such thing as the Clinch River reactor board.

Mr. SHAMANSKY. What is that entity? He is a member of that group, isn't he?

Mr. SHLEMON. No, sir.

Mr. VOLKMER. We have a project board?

Mr. SHLEMON. Yes. That is made up of a number of utilities.

Mr. VOLKMER. You also have another corporation, do you not? The Breeder Reactor Corporation, that is made up of who?

Mr. SHLEMON. The utilities, again.

Mr. VOLKMER. The Project Management Corporation is the one to whom the utilities contribute the money; is that not correct?

Mr. SHLEMON. That is correct. No, I am sorry, they contributed to BRC and they—

Mr. VOLKMER. To the Breeder Reactor Corporation, and BRC gave it to the Project Management Corporation?

Mr. KEARNEY. That is right.

Mr. VOLKMER. The latter receives funds from the Federal Government?

Mr. SHLEMON. No.

Mr. VOLKMER. Would the project manager contract with the contractor?

Mr. SHLEMON. The Project Management Corporation turned over control of the project in 1976. The Federal Government now spends all of the money, that money which it gets under appropriations and that money which is given to it by PMC.

Mr. VOLKMER. PMC hasn't given the Federal Government any money since 1977?

Mr. SHLEMON. That is right.

Mr. VOLKMER. The \$117 million, was that all turned over or spent prior to 1977?

Mr. SHLEMON. I can't answer that.

Mr. VOLKMER. How much of that is unspent?

Mr. CAFFEY. Mr. Volkmer, the amount of \$13.3 million of that \$117.2 is ascribable to the utility company investment in the project and represents anticipated expenditures through the end of this fiscal year, and it includes expenditures every year since the project began.

Mr. VOLKMER. That was actually donated by or contributed by the utilities to Breeder Reactor Corporation, and they in turn turned it over either to Project Management Corporation or to the Department of Energy?

Mr. SHLEMON. The Breeder Reactor Corporation delivers the funds to the Project Management Corporation, which keeps them, pays its own employees and the other utility participants, and then, in accordance with an annual financial plan, would make additional cash contributions to the Department of Energy at different times for actual incorporation of the project expenditures.

Mr. VOLKMER. Now, the \$113.3 has already either been obligated or spent?

Mr. SHLEMON. It will actually be spent in the project by the end of this year.

The CHAIRMAN. Mr. Shamansky, you are recognized for 1 additional minute.

Mr. SHAMANSKY. Thank you, Mr. Chairman.

Mr. Kearney, I still continue to be disturbed, obviously, by your inevitable conflict of interest. By stressing throughout your testimony the equity of the situation as distinguished from the legal liability that we are here to determine—if there is legal liability that will be determined by the courts and not by you in your conflict-of-interest capacity as a member of whatever that entity is and as senior vice president of the Electric Institute.

Mr. KEARNEY. I was asked late Friday night if I would be willing to appear for BRC, to speak to that one aspect of what might potentially be liability in the cancellation of the Clinch River breeder reactor.

Mr. SHAMANSKY. But you have been threatening equity?

Mr. KEARNEY. May I finish?

Mr. SHAMANSKY. Yes, sir.

Mr. KEARNEY. I have done that to the best of my ability and I have relied on counsel to talk about the legal liability aspect of it. As has been pointed out today, there is question as to whether there is legal liability or not. Our suggestion has been to the committee that if they take this into consideration at this point when they are looking at the total package, and, as the chairman says, without prejudice for or against the utility industry or the committee, that this may be the best way to do it. As Mr. Hobelman has pointed out, we think that we have cause and that we will pursue that cause, if necessary, but that is the gist of what I was trying to say and perhaps I said it poorly.

Mr. SHAMANSKY. Mr. Chairman, I would personally hope that we could have some testimony from the counsel for the Department of

Energy. We have people here only involved with the Clinch River breeder reactor project. I beg to have some very straight lawyerlike testimony from someone not immediately involved in this project.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Gregg.

Mr. GREGG. Thank you, Mr. Chairman.

I would like to speak to the counsel who is here from DOE, Mr. Bergholz, for a second.

Specifically, as we get into this whole issue of the \$117 million reimbursement to utilities, that is a contingent liability of debt, isn't it?

Mr. BERGHOLZ. That is right, it is contingent.

Mr. GREGG. So as a practical matter, under the Federal procedures of your office or any other reputable law firm representing the Government, you are not going to escrow dollars prior to any settlement being entered into, are you?

Mr. BERGHOLZ. We think that it is appropriate to consider the potential for any liability up to that \$117 million.

Mr. GREGG. That doesn't involve escrowing actual dollars for contingent liability at best, as you define it?

Mr. BERGHOLZ. No, it wouldn't involve escrowing.

Mr. GREGG. I thank you very much for that.

I also notice under the termination contingency, \$31 million in the GAO report—Mr. Peach, I believe, speaks to the fact that this falls in a more realistic contingency of unifying the \$5.4 to \$10.5 million in your report, versus \$31 million.

Mr. PEACH. That is correct. The figure we had for contingency cost was \$5.4 million to \$10.5 million to cover unanticipated cost increases in the various termination activities, so it is a contingency with respect to that, not with respect to any legal obligation that may be involved.

Mr. GREGG. Taking the high side at \$10.5 million, I would like to reconstruct these figures briefly. We have \$31.5 million for closeout and settlement. The completion of final design, I think that has been argued, and you could eliminate that one.

The resolution of generic issues is \$4.4 million. Manpower cost is \$34.9 million. Personnel relocations is \$3.9 million. Personnel termination, \$11.7 million. The utility reimbursement is clearly a contingent liability which we are not going to be escrowing this year in my opinion, if we are going to approach it in a rational way. Termination contingency, \$10.5 million, giving us a potential total liability this year, not even in outyears, of \$96.4 million, and you have \$88 million in the pipeline so we are really down to about \$8.4 million here as the actual obligation as of today if we were using these figures; isn't that correct? Are those assumptions correct? I realize this is a 3-year figure.

Mr. GATES. I think that is correct, Mr. Gregg. You eliminated the \$187.4 million and the \$117.2 million.

Mr. GREGG. And reduced the \$31 million to \$10.5 million, and there is \$88 million in the pipeline?

Mr. GATES. Yes.

Mr. CAFFEY. Under that scenario, you are going no further toward writing a final report. You simply stop.

Mr. GREGG. That is correct.

Mr. OTTINGER. In his calculations he ought to consider the \$4.4 million doesn't have to be spent if you are not going to complete the design work.

Mr. GREGG. You can also recover the \$100 million of scrap, but I am just talking about using these figures here.

Thank you very much.

Mr. VOLKMER. Actually, what the committee has done is not yet lost. And if this follows through by the full Congress, it will probably not become law until sometime in the fall.

Looking at that, what will be expended between now and the fall? Will the \$88 million be gone?

Mr. CAFFEY. No, sir, Mr. Volkmer. That \$88 million is the expected funds available, unobligated, unused budget authority available at the end of this fiscal year, provided that the other \$50 million, which was under consideration earlier but not yet appropriated for this year, were to be appropriated.

Mr. VOLKMER. You are counting on the \$50 million that is in the supplemental?

Mr. CAFFEY. That is correct.

Mr. VOLKMER. That makes up part of the \$88 million?

Mr. CAFFEY. That is right.

Mr. VOLKMER. As far as design and those types of things are concerned, the amounts that are in here, are they as of the end of the fiscal year?

Mr. CAFFEY. Yes, sir, this is as of the end of this current year.

Mr. VOLKMER. So those figures will hold true, as the gentleman has alluded to previously?

Mr. CAFFEY. That is right.

Mr. VOLKMER. The other question I would like to ask, are any members here on the panel presently either a member of the board, counsel with—first let's talk about Project Management Corporation. Anybody connected with Project Management Corporation? Serving on the board in any way? Or in the past has ever served on the board? [No response.]

Mr. VOLKMER. Nobody.

Is anybody with the Breeder Reactor Corporation or BRC?

Mr. HOBELMAN. I am serving as counsel for BRC.

Mr. KEARNEY. The witness list unfortunately shows me on the board, which I am not. I am not connected.

Mr. VOLKMER. Never have been?

Mr. KEARNEY. Never have been.

Mr. CAFFEY. With respect to that witness list, as Mr. Kearney said, there is no such entity as the Clinch River Breeder Reactor Board. The project is managed by the Department of Energy. There is no board that manages the project. The project is managed by the Department of Energy. That must be made very clear. With respect to the potential conflict of interest between Mr. Kearney, for instance, representing a utility company and managing the project, the project is managed by the Department of Energy.

Mr. VOLKMER. Mr. Kearney, are you a part of that master team?

Mr. KEARNEY. I am not. I pointed out I am not a member of the board of BRC, but the board is made up of utility representatives and also the chief operating officer of EEI, NRECA and APPA are

members of that board. Mr. McCollam, president of the Electric Institute, is a member, but I am not.

Mr. VOLKMER. I yield now to the gentlewoman from Rhode Island.

Mrs. SCHNEIDER. Mr. Chairman, would it be possible if we could, at the beginning of the record, indicate the identity of these gentlemen so that when one is reading through the record they would have the opportunity of knowing where these gentlemen are coming from when reading their answers?

The CHAIRMAN. Yes. The record will reflect the accurate titles.

Mrs. SCHNEIDER. Thank you very much.

Mr. VOLKMER. I have no further questions, Mr. Chairman.

The CHAIRMAN. Mr. Brown.

Mr. BROWN. Would you allow me to yield to Mr. Wolpe for just a moment?

The CHAIRMAN. Surely.

Mr. WOLPE. I thank the gentleman for yielding.

I would like to ask Mr. Kearney a question related to the subject of equity, which he introduced earlier as being appropriate for consideration in this issue.

When the contract was first entered into, not by contract but simply as a matter of allocation of cost, it worked out to essentially a 50-50 allocation of resources between the industry on the one hand and the Government on the other. Now as you are aware, given the escalation of cost, there is now a breakout of 91 percent Government funding, 9 percent utility funding.

As a matter of equity, would utilities be prepared to increase their contribution to the project, or have they contemplated any increase in their contribution to the project?

Mr. KEARNEY. First of all, Mr. Wolpe, you can appreciate that I can't answer that question yes or no for an entire industry. I suspect it will be no.

The second point I would like to make is the fact that most of that cost increase has been due not to any improvements in the project but rather by the fact that for the last 80 months or so the Government has seen fit not to proceed with the project at the pace that was developed.

The second point I would like to make, and one with which Mr. Ottinger is very familiar, is that the financing difficulties of the utility industry at this point would make it very difficult for them to make an additional contribution to projects like this when they are having difficulty in meeting the financial needs of generation, and other facilities.

Mr. BROWN. I think it is important to simply get on the record the different allocation of costs that have resulted with the passage of time. There was a decision by the Government to move away from this project, which is due to lack of economic justification to the project and the changes in the industry. That can be argued from both directions. Should the Government contribution be increased for something which is not economic?

Mr. KEARNEY. And the gentleman knows the other side of that question too.

Mr. ERTEL. Mrs. Bouquard asked how much would be the benefits, if this were continued. I think you added up all the sales of

energy and came up to about \$2.8 billion and you took off the cost of fuel and came up with around \$700 million; is that correct?

Mr. CAFFEY. That was \$2.3 billion, less the operating cost and fuel cost, to give a net of \$700 million in fiscal year 1982 dollars.

Mr. ERTEL. You know, of the present-worth concept.

Mr. CAFFEY. Yes.

Mr. ERTEL. Could you reduce that to present worth? All those sums? I assume the \$2.3 billion would extend over periods from the completion of the reactor until maybe 2010 or something like that?

Mr. CAFFEY. Yes. That is the operating life.

Mr. ERTEL. Can you reduce those benefits to present worth?

Mr. CAFFEY. We do not forward cost them. We simply said in fiscal year 1982 dollars this is what it would be.

Mr. ERTEL. I would suggest to you that somebody making an investment in that would figure benefits, by reducing that to present worth. I would suggest if you reduce those things to present worth, you come out with a negative. In other words, there would be a savings just on cost of fuel and benefits. I think you would come out with at least a zero.

I would suggest, if you would, please reduce the benefits to present worth so that we can look at that in an analytical way.

Mrs. BOUQUARD. This is an R. & D. project not intended to be commercially viable but merely a demonstration of the viability of breeder reactor technology. The purpose of Clinch River is not demonstration of commercial feasibility. It was never intended for this purpose.

Mr. ERTEL. I agree. This is an R. & D. project. But I don't think you ought to try and throw in the equation benefits that don't exist, if you reduce it to a present-worth basis.

That is all.

Mr. BROWN. Mr. Gates, I would like to ask this one question. I think you have already been asked this question before but you have presented us with an estimated cost of termination effective October 1, which I would describe as the worst-case scenario. What I would like to have is a best-case scenario. That is the minimum cost for expeditious termination.

Mr. GATES. We have been asked that question, Mr. Brown, and I suggested we would like the opportunity to submit an answer for the record.

Mr. BROWN. All right.

I would just like to make it clear that you understand what I would like to have as well as what someone else wants.

Mr. GATES. I do understand.

[The information follows:]

Question. How cheaply can the CRBRP Project be terminated if the Government wants to get out as quickly and as cheaply as possible?

Answer. The estimated cost of terminating the CRBRP Project, assuming start of termination October 1, 1981, and no further design or report activities, is \$101.9 million. Details of this estimate are provided in the attachment. This does not include any funding for reimbursement of utilities and reactor manufacturers' contributions, if required. The estimated amount of these contributions, as of September 30, 1981, is \$117.2 million.

The estimate is based on the sole criterion of terminating at minimum additional cost and does not provide for the completion of selected design activities of generic benefit to the LMFBR program.

CRBRP funding analysis for October 1, 1981, termination assuming no further design and no report activities

[In millions]

	<i>Funding</i>
Outlays required	\$101.9
Less B/A available from prior appropriations*	88.0
Additional B/A required for termination	13.9
* B/A available from fiscal year 1980	102.7
Fiscal year 1981 B/A appropriated to date	122.0
Additional fiscal year 1981 B/A required	50.0
Total B/A expected to be available in fiscal year 1981	274.7
Less fiscal year 1981 outlays	186.7
B/A available for termination from prior appropriations	88.0

CRBRP termination outlays for October 1, 1981, termination assuming no further design and no report activities

[In millions]

	<i>Outlays</i>
Close out and settlement of terminated procurements (Includes vendor management cost)	\$31.5
Manpower cost to manage subcontracts to be completed, terminate subcontracts, and settle claims	34.9
Personnel relocations	3.9
Personnel terminations	11.2
Termination contingency	20.4
Total	\$101.9

*Does not include reimbursement of utilities or reactor manufacturer contributions, if required. Estimated contributions as of September 30, 1981, are \$113.3 million from utilities and \$3.9 million from reactor manufacturers.

The CHAIRMAN. Mr. Gates, we may need counsel to assist in answering these questions.

On the chart that you provided us, I want to get some information, particularly on the first item. It says closeout and settlement of terminated procurements, \$31.5 million, and you stated it would be \$2.6 million for fiscal year 1982.

Now, how much of that is legal obligations? Are there penalty costs on procurement termination?

Mr. GATES. May I ask Mr. Caffey to answer that question?

Mr. CAFFEY. Mr. Chairman, what we have done is, we have evaluated those open contracts which we will have at the end of this fiscal year and say this is the expected liability which we will have in order to be able to close out those contracts under the termination provisions of the contracts, which reimburse the vendors for all their costs. Not that they would make a profit or a fee; that would be negotiated.

The CHAIRMAN. If the Congress decided we wanted to terminate it at the end of this fiscal year, terminate, then that would be a hard figure, then?

Mr. CAFFEY. It is an estimate, of course. We believe it is a liability which we would have.

The CHAIRMAN. Now, the next two. Completion of final design and a resolution of generic issues with NRC. Now, in the comple-

tion of final design, is any of that generic or is that all a part of the Clinch River project?

Mr. CAFFEY. A part of that is the work which is generic in nature. A certain amount of test and analysis which underlies—

The CHAIRMAN. How much is generic? Can you break that down?

Mr. CAFFEY. We will provide that for the record.

[The information follows:]

In reference to the above, the following is supplied for the record: The estimated cost of design work which has generic benefit is \$42 million, excluding \$17.3 million for testing of the steam generator and sodium pump prototype, which is currently planned to be performed as part of the LMFBR base program.

The CHAIRMAN. Do you have a ball park figure?

Mr. CAFFEY. I think somewhere between \$25 million and \$40 million at the very outside. A good bit of testing and analysis to support testing is under way and so is the design of fabricated hardware not yet completed.

The CHAIRMAN. In the second item, the resolution of generic issues with NRC. If the project were to be terminated, then that would not have to proceed; is that correct?

Mr. CAFFEY. It would not have to proceed if the terms of the termination said this does not work out on those issues.

The CHAIRMAN. Assuming that were to happen?

Mr. CAFFEY. That is right.

The CHAIRMAN. Then that figure could be wiped out?

Mr. CAFFEY. That is right.

The CHAIRMAN. The manpower to manage subcontracts to be completed, termination of subcontracts and settlement of claims. You have \$34.9 million of which \$18 million is estimated for fiscal year 1982. How much of that figure is a hard figure? The contract cancellation penalties are involved?

Mr. CAFFEY. No, the contract cancellation penalties are on the first line, and that first line includes the cost of the suppliers and manufacturers for their end of the termination activity. This line, the manpower costs, the subcontracts and so on, is the project end of the line. The project organization and its principal contractors.

The CHAIRMAN. If we told them to cease, how firm is that figure?

Mr. CAFFEY. We think it is a reasonable estimate for closing them out.

The CHAIRMAN. That is a firm figure?

Mr. CAFFEY. Yes, sir.

The CHAIRMAN. This is predicated on the determination at the beginning of fiscal year 1982?

Mr. CAFFEY. Yes.

Mr. ERTEL. It says: "Manpower cost to manage subcontracts to be completed." If you eliminated that end of it and just took manpower costs for termination of contract and settlement of claims, I assume it would be a small number?

Mr. CAFFEY. That is a title line carried over from previous termination estimates and there would probably be no subcontracts to be completed.

The CHAIRMAN. The subcontract would be terminated?

Mr. CAFFEY. That is simply the total caption.

Mr. ERTEL. How much is that going to cost in 1982 to do that?

The CHAIRMAN. He estimated earlier \$18 million in fiscal year 1982.

Mr. CAFFEY. That is right.

The CHAIRMAN. That is not to complete the contract; that is to terminate it?

Mr. CAFFEY. That is right. There might be a contract or two which runs out at the end of the fiscal year which isn't quite delivered, such as the secondary control rod system unit 4, due on September 30. If we don't go to September 30, it comes over to October. The cost will not be consequential.

The CHAIRMAN. Personnel relocation. You are talking about \$3.9 million total, \$1.2 million in fiscal year 1982. That would be personnel located there who would go back to other places?

Mr. CAFFEY. That is right.

The CHAIRMAN. Are those DOE or contractor?

Mr. CAFFEY. Those are all contractor employees.

The CHAIRMAN. Is there an obligation for their relocation cost?

Mr. CAFFEY. There is in terms of the contractor.

The CHAIRMAN. Personnel termination, 11.7 for total, with 1.7 for fiscal year 1982. Is that DOE or contractor personnel?

Mr. CAFFEY. That is contractor personnel. About 1,500 people estimated at \$8,000 a head, which is what the termination costs seem to be.

The CHAIRMAN. That is a contractual obligation that we have?

Mr. CAFFEY. Yes, sir.

The CHAIRMAN. Now the other figure, the equity figure of \$117.2 million, we will skim over that because that is a matter that we are going to have to decide.

The termination contingency. I assume that means of \$31 million—you say \$16.6—that is contingency for all the above with the exception of reimbursement for utilities?

Mr. CAFFEY. Yes, sir. We have 5 percent on the second line, 5 percent of \$187 million. Then for the six lines, 25 percent.

The CHAIRMAN. If they were all eliminated, then that figure could be eliminated; is this correct?

Mr. CAFFEY. No, sir. This is a contingency in relation to the quality estimate at this time. The closeout with hardware manufacturers and the cost of management to close out those contracts. The quality estimate is not that fine that we can give you precise numbers.

Mr. OTTINGER. I have two questions. The chairman said the fiscal year 1982 estimate at \$16.6 million. I copied down \$16.2 million. I would like to get that figure accurately.

Mr. CAFFEY. \$16.6 million is the number that I have.

Mr. OTTINGER. The other question is, how do you relate that \$31 million to Mr. Peach's \$5.4 million to \$10.5 million?

Mr. CAFFEY. I don't know how Mr. Peach got his number.

The CHAIRMAN. You got yours by taking 5 percent of 187?

Mr. CAFFEY. And 25 percent of other lines, not including the reimbursement line.

The CHAIRMAN. And 25 percent of all the other lines?

Mr. CAFFEY. Not including the reimbursement line and not including the resolution of generic issues line.

The CHAIRMAN. Mr. Peach, how did you arrive at your \$5.4 million to \$10.5 million?

Mr. PEACH. We were working with the same figures but were using a different breakdown. We showed a total overall cost for contractual obligations of \$102.5 million that was a cumulation of several lines. The total excludes the lines for completion of final design, for reimbursement to utilities, and contingency costs ranging from \$5.4 million to \$10.5 million.

The CHAIRMAN. What went into your \$102.5 million?

Mr. PEACH. I have lines 1, 3, 4, 5, and 7.

The CHAIRMAN. That included reimbursement of utility and reactor manufacturer contribution?

Mr. PEACH. I will ask Mr. Fowler to respond since he was in charge of compiling the figures and pulling it together.

Mr. FOWLER. Before providing the details, I think it should be pointed out that the figures that you are looking at were refined from the figures we based our testimony on. There was some fine tuning done since we prepared our testimony.

Mr. PEACH. We don't have a copy of DOE's letter as furnished to you, today. However, we have a copy of other information. I think there might have been some fine tuning of the numbers but it is very small fine tuning.

Mr. OTTINGER. Will you give us that for the record of how you compiled your \$102.5 million? You took 5 percent of that to get to \$5.4 million?

Mr. FOWLER. No, we have \$31.5 million for closeout and settlement and terminating procurement; \$34.9 million for manpower costs; \$3.9 million for personnel relocations; \$11.7 million for personnel terminations; and \$20.5 million as a contingency for those items, those contractual obligations.

Mr. ERTEL. That is not just for fiscal year 1982?

Mr. FOWLER. That is for the entire closeout period.

Mr. OTTINGER. Your testimony says \$5.4 million and \$10.5 million.

Mr. FOWLER. Those figures come from taking the \$20.5 million contingency for the contractual obligations and subtracting it from the overall contingency of \$31 million which was identified by DOE in the \$422 million for the entire termination cost. We are working with the figures we got from DOE.

Mr. PEACH. We have \$102.5 million in my testimony. That figure included about \$20 million which was involved with some possible contingencies for termination of contractual obligations, and in addition we had another figure, \$5.4 million to \$10.5 million for additional termination contingencies. As the figures furnished by DOE suggest, they are lumped together as contingency figures in one place, and that is where the confusion is. The total numbers are basically the same.

Mr. CAFFEY. You would be endorsing \$25 million to \$30 million contingency?

Mr. PEACH. You say endorsing. It is what the DOE figures would come down to. It was \$25 million to \$30 million in contingencies as stated in current DOE estimates.

The CHAIRMAN. In 1979 the question was asked about total termination cost in our committee report. It was listed for 3 years. This

is fiscal year 1979. It was listed as \$160.6 million in termination costs, not including any utility payback.

In the record last year, Dr. Cunningham stated that—

These termination funds that I am talking about do not include a payback to the utilities. That would have to be negotiated. If we were required to pay back the utilities, then obviously there would be additional funding required but that is not included in my estimate.

Why has that changed from 1979 and in 1980, that you include utility payback in the closeout cost?

Mr. GATES. We included it, Mr. Chairman, recognizing that there is no legal requirement for paying it back, but understanding that the utility has the right to make a claim for it in the Court of Claims. It is just a figure put in there recognizing that fact. I tried to explain that in my note at the bottom of the page that it was a complex issue, and it seemed prudent to include that sum in case the utilities win.

Mr. SHAMANSKY. Mr. Chairman, I find that an unusual procedure. You are assuming the duties of somebody else. We don't know they are going to put any such claim in, and the inclusion of such a figure on such a tenuous basis—the admission was there is no legal basis. To assume, then, that there is a legal basis when you just said there isn't is terribly confusing. It has obfuscated the whole issue this afternoon.

Mr. GATES. I am sorry for that, sir. There is no intention to obfuscate. I believe it was wiser to indicate the potential for that within 3 years from now than be scolded for not having recognized it.

Mr. SHAMANSKY. You say there is no legal liability. I have asked counsel repeatedly about that. You tell me no. The other gentleman says there is an equity. We are not dealing with equity, we are talking about legal liability there.

Mr. ERTEL. It would seem unusual to come back on an equitable basis when you have negotiated a contract. Don't you find that unusual? It seems to me if I have a whole fleet of lawyers, very sophisticated people involved in a contract, we draw up what is a fairly complex contract—I have gone through it—and we have all these legal counsel and we provide for termination—and you admit under that there is no legal basis for paying—doesn't it seem a bit unusual to think that you might have to pay on an equity basis after you have had all that legal counsel drawing up a contract defining rights and liabilities of the parties? Doesn't that sound a little bit unusual?

Mr. GATES. Yes, it does, sir.

Mr. ERTEL. It does to me, too. I got a strange feeling when I saw that.

Mr. HOBELMAN. I would like it quite clear that at least on behalf of the utilities represented by BRC and PMC, we feel there is a legal basis for claim. I have mentioned equity today because I think that is a concern of this committee also.

The CHAIRMAN. I want to place in the record a letter I have received from the Office of Management and Budget to be included with the other letters that were included earlier today.

[The letter follows:]



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

May 11, 1981

Honorable Don Fuqua
Chairman, Committee on Science
and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This letter is in response to your request for information on termination costs for the Clinch River Breeder Plant project.

We have discussed the costs of termination with the Department of Energy. These costs assume the enactment of legislation which authorizes termination activities to begin on October 1, 1981 with total funds appropriated in the FY 1982 budget.

Estimated Costs
(\$ in millions)

Closeout of Procurements	\$31.5
Completion of Final Design Including Final Report	187.4
Resolution of Generic Issues with NRC	4.4
Management of Subcontract Completion or Termination	34.9
Personnel Relocations	3.9
Personnel Terminations	11.7
Reimbursement of Utility Contributions, If Required	117.2
Termination Contingency	<u>31.0</u>
Total	\$422.0
Less Budget Authority Available from Prior Appropriations	<u>-88.0</u>
Additional Budget Authority Required	\$334.0

As you know, the Administration strongly supports completion of the Clinch River Breeder Reactor. If the Committee does support termination of the project, however, we believe it is essential that the full amount of additional authority needed for implementing that decision be reflected in the authorization bill.

Please let me know if you have any additional questions concerning these estimates.

Sincerely,

F. N. Khedouri
Frederick N. Khedouri
Associate Director
for Natural Resources,
Energy and Science

Mr. WINN. Mr. Chairman, I would like to place in the record a letter from Mr. David Stockman in response to a question I sent to him last Friday.

[The letter follows:]



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

MAY 11 1981

Honorable Larry Winn
U. S. House of Representatives
Washington, D. C. 20515

Dear Larry:

For the past seven years, Congress has repeatedly stated its strong support for the Clinch River Breeder Reactor. That support has been sustained through two Republican Administrations who supported CRBR and one Democratic Administration dedicated to terminating the project. Republicans over the years have seen the development of the breeder reactor as a logical comparison to our commercial light water reactors and a logical part of a complete and efficient total nuclear fuel cycle. The Clinch River Breeder Reactor is the first material evidence that the United States is willing to move toward such a goal.

The commitment to such a goal is reinforced by this Administration. The Reagan Administration favors the economical and safe development of nuclear energy. And, in particular, this Administration supports construction and operation of the Clinch River Breeder Reactor. This Administration intends to reinvigorate the effort on this project by joining the long struggle by the Congress to complete this project.

If there are any further questions either regarding our position or regarding technical matters pertaining to Clinch River, we would be happy to provide clarification.

Sincerely,

David A. Stockman
Director

Mr. OTTINGER. Reserving the right to object, could the other members of the committee see that?

Mr. WINN. I don't know, it was addressed to me.

Mr. OTTINGER. You are going to put it in the record?

Mr. WINN. If it is in the record, Mr. Ottinger you certainly ought to be able to see it.

Mr. OTTINGER. I am not objecting to your putting anything in the record, but I think as a courtesy to other members of the committee it could be made available, and I would make that request.

Mr. WINN. I will be glad to make it available in about 30 seconds if that is when we wind up.

Mr. Chairman, with regard to the question of Mr. Shamansky, I would like to say one of the intentions of the hearing today, as I understood it, was to try to get at all possible phaseout costs, and I

think that the method that the gentleman has used, on what the utility might owe or whether the Government might owe the utilities, certainly would come under that category. How they arrive at it is something else.

Mr. GATES. Thank you, Mr. Chairman.

Mr. ERTEL. I have gone through the contract. I was having some problems with it in the interpretation of the equity position by the utility—I would like to work with the utility on another bill and I am getting a little down the road here, but in any event I was having a hard time understanding their position. I took the time to read the contract this morning. I went through the contract, and the contract provides the termination provisions. Those terms and provisions are based on authorization provisions, and so on, and one provision of the contract which says the contract is breached and terminated was upon the failure of adequate funding which brought into effect the clause "termination."

Now, maybe I am misreading the contract, and I would be happy to hear from counsel for the utility, but I will refer you to the sections. I will try to read the pertinent sections. I may miss some.

Section 11.4.4 of the contract says: "Upon consideration of all available resources"—I will drop the including clause because it includes a lot of them—"Upon consideration of all available resources to permit the conduct of the project, including full satisfaction of anticipated commitments to contingents, the fact"—that is a breach. That clause, "termination." How can you as utilities argue that the failure of the Government to fund you is something you can want and anticipate and therefore you are entitled to equity. Because it has specifically in the contract as, one, of termination in breach, and, two, if in fact the Congress does not fund, that is a breach of the contract, which in effect the termination brings into place the liabilities of the parties.

And then I go back and read the termination provisions of the contract which gives the liabilities of the parties and it doesn't say in those termination provisions that we should pay—"we" being the Government—to the utilities, but defines what the utilities want to pay in addition upon termination, to effect termination.

You have turned the argument around and say we owe you, and I would suggest to you, if you read the contract carefully, upon a termination, you in fact owe for the termination.

Mr. HOBELMAN. Well, Mr. Congressman, I disagree. The Government breached on numerous occasions in 1977, 1978, 1979, and 1980, and, as I said before, this led to the difficulties which we find here today, and the damage that accrues from that breach is damage at least one the repayment of facility funds which have been paid into the project, and, two, the loss of foreseeable benefits.

Mr. ERTEL. Well, if I might just follow up on that, you say that. I see no provision in the contract for it. In fact, I find the exact opposite. Now, do you have a provision in the contract you can point out?

Mr. HOBELMAN. We did not provide in the contract for breach of the contract by the Government.

Mr. ERTEL. It says, "Upon consideration of all available resources," and it talks about the failure to get funding. That is a breach and a termination.

Mr. HOBELMAN. Failure to get funding in these circumstances is at least in part derived from the failure of the DOE to seek authorization for 4 consecutive years and the failure of DOE and NRC to proceed with licensing.

Mr. ERTEL. I guess we would have to have a judge decide that. And since I am the judge at this point, I think I am right.

Mrs. BOUQUARD. I have a question for Mr. Peach. Am I correct that section 6, Public Law 91-273, is a present authorization for this demonstration project? It is a permanent authorization?

Mr. PEACH. Mrs. Bouquard, I am sorry, we would have to look at that to give you a definite answer on that.

Mrs. BOUQUARD. Would you be willing to provide us with this information?

Mr. PEACH. We would certainly be glad to provide a statement for the record on that.

Mrs. BOUQUARD. How long will it take you to provide it?

Mr. PEACH. I suspect I can provide it to you tomorrow. Will that be satisfactory?

Mrs. BOUQUARD. That would be very nice.

[Responses provided to Chairman Fuqua and Representative Bouquard on May 12, 1981, follow:]



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-164105

May 12, 1981

The Honorable Don Fuqua
Chairman, Committee on Science
and Technology
House of Representatives

Dear Mr. Chairman:

During yesterday's testimony by representatives of this Office before your Committee, Representative Bouguard asked about the status of the authorization for the Clinch River Breeder Reactor Project (CRBRP). Specifically, Ms. Bouguard asked whether the CRBRP is under a permanent statutory authorization or whether the project must be annually reauthorized by the Congress.

The CRBRP is authorized by section 106 of Pub. L. No. 91-273, as amended by section 103(d) of Pub. L. No. 94-187, December 31, 1975. Although the statute specifically addresses, among other things, program requirements and appropriations for its implementation (through September 1976), it is silent with regard to the expiration of the basic program authorization:

"SEC. 106. LIQUID METAL FAST BREEDER REACTOR DEMONSTRATION PROGRAM--FOURTH ROUND.--(a) The Energy Research and Development Administration (ERDA) [now the Department of Energy] is hereby authorized to enter into cooperative arrangements with reactor manufacturers and others for participation in the research and development, design, construction, and operation of a Liquid Metal Fast Breeder Reactor powerplant, in accordance with criteria approved by the Joint Committee on Atomic Energy, without regard to the provisions of section 169 of the Atomic Energy Act of 1954, as amended. Appropriations are hereby authorized for the period consisting of the fiscal year ending June 30, 1976, and the interim period following

B-164105

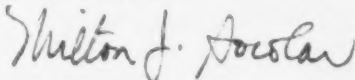
that fiscal year and ending September 30, 1976, for the aforementioned cooperative arrangements as shown in the basis for arrangements as submitted in accordance with subsection (b) hereof. In addition, ERDA may agree to provide assistance in the form of waiver of use charges during the term of the cooperative arrangements without regard to the provisions of section 53 of the Atomic Energy Act, as amended, by waiving use charges in an amount not to exceed \$10,000,000. * * *

In prior decisions, we have considered the legal effects of section 106, *supra*, on the conduct of the CRBRP itself as well as on appropriations made for the project. */ In all of these decisions we have consistently indicated that section 106 is a provision whose operation and requirements have remained unaltered since the 1975 amendments thereto. It has been, and still is, our view that absent legislative modification, section 106 will continue to operate in the way set forth in our analysis of June 23, 1977, copy enclosed.

Thus, we view section 106 as permanent statutory program authority whose terms and duration can only be modified by the Congress through the legislative process.

We trust the foregoing is responsive to the question raised. A copy of this opinion is being provided to Representative Bouquard.

Sincerely yours,



Milton J. Socolar
Acting Comptroller General

Enclosures

*/ See, for example, B-164105, December 5, 1977; and B-164105, November 2, 1978, copies enclosed.



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

IN REPLY
REFER TO

B-115398

June 23, 1977

The Honorable Henry M. Jackson
Vice Chairman, Joint Committee
on Atomic Energy
Congress of the United States

Dear Mr. Vice Chairman:

This replies to your letter of May 26, 1977, in which you and Senator Baker asked that we review deferral number D77-58 transmitted by the President to the Congress on May 18, 1977. By this action the President proposed to defer \$31.8 million in budget authority appropriated for the Clinch River Breeder Reactor Project (CRBRP). Because you believe the action taken by the President should have been proposed as a rescission rather than as a deferral of budget authority, you asked that we review this matter to see if it has been correctly classified. You also asked if any actions currently undertaken or proposed by the executive branch toward significant curtailment of the CRBRP exceed or will exceed controlling statutory authorities.

Based on the facts currently available, we conclude that the action proposed to the Congress was correctly classified--it is a deferral of budget authority. However, we will monitor the situation and will promptly report to the Congress any future actions constituting a rescission or deferral under the Impoundment Control Act of 1974.

With respect to the second question, we believe that the Administration's proposed curtailment of CRBRP objective is substantially inconsistent with that set forth in the CRBRP program criteria that were approved, as required by law, by the Joint Committee on Atomic Energy (JCAE). We also believe the curtailed program is not in accord with the statute authorizing the CRBRP. In our view, for these reasons the Energy Research and Development Administration (ERDA) lacks the legal authority to implement the President's plan.

Accordingly, expenditures of Federal funds to fully implement the revised CRBRP program would be improper unless ERDA first obtains the necessary authority to undertake such actions.

B-115398

Should ERDA proceed to use CRBRP funds to implement the President's proposed plan without having secured such authority, this Office will review the specific actions taken with the objective of taking formal exception to such expenditures.

There follows a detailed discussion of our findings and conclusions.

I. BACKGROUND:

A. Progress to Date.

Before discussing the legal issues raised by your letter, it is appropriate to discuss the history and facts surrounding the project and the effects of the most recent executive branch actions on the CRBRP. In reviewing the President's actions, we met with ERDA and contractor officials both at headquarters and at the project office site.

Prior to the recent executive branch actions, the Clinch River Breeder Reactor Demonstration Plant was scheduled to be operational by early 1984 and was to be the nation's first large-scale liquid metal fast breeder reactor (LMFBR) demonstration plant with a 380 megawatt capacity. Presently, design, procurement, and component fabrication for the project are about 25 percent complete, although no site preparation or actual plant construction has yet begun. According to ERDA estimates, the project, if completed, will cost about \$2 billion, \$270 million of which will be contributed by industry participants. As of May 31, 1977, ERDA had spent about \$254 million and industry participants a little over \$99 million.

B. Origins and Statutory Basis of the CRBRP.

The CRBRP had its origins in 1969. In that year the Atomic Energy Commission (AEC) was specifically authorized to study the ways in which an LMFBR demonstration project could be designed. Section 106 of Public Law 91-44, approved July 11, 1969, stated:

"Sec. 106: Liquid Metal Fast Breeder Reactor Demonstration Program--Project Definition Phase.--(a) The Commission is

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hereby authorized to conduct the Project Definition Phase of a Liquid Metal Fast Breeder Reactor Demonstration Program, under cooperative arrangements with reactor manufacturers and others, in accordance with the criteria heretofore submitted to the Joint Committee on Atomic Energy, without regard to the provisions of section 169 of the Atomic Energy Act of 1954, as amended, and authorization of appropriations therefor in the amount of \$7,000,000 is included in section 101 of this Act."

One year later the Congress went further in the area of an LMFBFR demonstration project and specifically authorized the design, construction, and operation of such a reactor. Section 106 of Public Law 91-273, June 7, 1969, stated:

"Sec. 106. Liquid Metal Fast Breeder Reactor Demonstration Program. Fourth Round.--(a) The Commission is hereby authorized to enter into a cooperative arrangement with a reactor manufacturer and others for participation in the research and development, design, construction, and operation of a Liquid Metal Fast Breeder Reactor powerplant, in accordance with the criteria heretofore submitted to the Joint Committee on Atomic Energy and referred to in section 106 of Public Law 91-44, without regard to the provisions of section 169 of the Atomic Energy Act of 1954, as amended, and the Commission is further authorized to continue to conduct the Project Definition Phase subsequent to the aforementioned cooperative arrangement. * * *

"(b) Before the Commission enters into any arrangement or amendment thereunder under the authority of subsection (a) of this section, the basis for the

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arrangement or amendment thereto which the Commission proposes to execute (including the name of the proposed participating party or parties with whom the arrangement is to be made, a general description of the proposed powerplant, the estimated amount of cost to be incurred by the Commission and by the participating parties, and the general features of the proposed arrangement or amendment) shall be submitted to the Joint Committee on Atomic Energy, and a period of forty-five days shall elapse while Congress is in session (in computing such forty-five days, there shall be excluded the days on which either House is not in session because of adjournment for more than three days): Provided, however, That the Joint Committee, after having received the basis for a proposed arrangement or amendment thereto, may by resolution in writing waive the conditions of, or all or any portion of, such forty-five day period: Provided, further, That such arrangement or amendment shall be entered into in accordance with the basis for the arrangement or amendment submitted as provided herein* * *. (Emphasis added.)

This basic scheme was retained in 1975 when section 106 of the 1970 act was amended by section 103(d) of Public Law 94-187, December 31, 1975:

"Sec. 106. Liquid Metal Fast Breeder Reactor Demonstration Program--Fourth Round.--(a) The Energy Research and Development Administration (ERDA) is hereby authorized to enter into cooperative arrangements with reactor manufacturers and others for participation in the research and development, design, construction, and operation of a Liquid

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Metal Fast Breeder Reactor powerplant.
in accordance with criteria approved by,
the Joint Committee on Atomic Energy,
without regard to the provisions of sec-
tion 169 of the Atomic Energy Act of
1954, as amended. Appropriations are
hereby authorized * * * for the afore-
mentioned cooperative arrangements as
shown in the basis for arrangements as
submitted in accordance with subsection
(b) hereof. * * *

"(b) Before EEDA enters into any
arrangement or amendment thereto under
the authority of subsection (a) of this
section, the basis for the arrangement
or amendment thereto which EEDA proposes
to execute (including the name of the
proposed participating party or parties
with which the arrangement is to be
made, a general description of the pro-
posed powerplant, the estimated amount
of cost to be incurred by EEDA and by
the participating parties, and the gen-
eral features of the proposed arrangement
or amendment) shall be submitted to the
Joint Committee on Atomic Energy, and
a period of forty-five days shall elapse
while Congress is in session (in comput-
ing such forty-five days, there shall be
excluded the days on which either House
is not in session because of adjourn-
ment for more than three days): Provided,
however, That the Joint Committee, after
having received the basis for a proposed
arrangement or amendment thereto, may by
resolution in writing waive the conditions
of all, or any portion of, such forty-five-
day period: Provided, further, That such
arrangement or amendment shall be entered
into in accordance with the basis for the
arrangement or amendment submitted as pro-
vided herein: * * * (Emphasis added.)

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Pursuant to the 1975 law, ERDA proposed criteria to the JCAE for its approval. On April 29, 1976, the JCAE approved the most recently submitted criteria. Those project criteria appear at page 63 of Modifications in the Proposed Arrangements for the Clinch River Breeder Reactor Demonstration Project. Hearings Before the Joint Committee on Atomic Energy, 94th Cong., 2d Sess., April 14 and 29, 1976 (1976 Hearings).

C. The Present CRBRP Criteria and Contract.

As a result of the JCAE's action of April 29, 1976 (a rollcall vote), the LMFBR demonstration program at the Clinch River site is governed by criteria that call for the design, construction, and operation of an LMFBR plant. These program criteria state that the CRBRP's major objectives are to demonstrate the technology pertaining to, and the reliability, safety, and economics of, LMFBR powerplants in the utility environment. Other objectives are to:

- provide for meaningful identification of areas requiring emphasis in the LMFBR research and development program;
- validate, to the extent practicable, technical and economic data and information pertinent to the total LMFBR program;
- assist in developing an adequate industrial base;
- provide for meaningful utility participation and experience in developing, acquiring, and operating LMFBR plants;
- help assure overall program success; and
- demonstrate and maintain U.S. technological leadership.

The criteria also specifically set forth design requirements and plant objectives stating, among other things, that the plant's first core is to use mixed oxide fuel consisting of uranium and plutonium and that it be designed, fabricated, constructed, tested, operated, and maintained in conformance with established engineering standards and high quality assurance practices.

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Pursuant to the JCAE-approved criteria, ERDA entered into a cooperative arrangement with the Project Management Corporation (PMC), the Commonwealth Edison Company, and the Tennessee Valley Authority (TVA) on May 4, 1976. That contract recognizes the controlling statutory criteria for the LMFBR. For example, the contract states, pertinently:

A. Para. 1.1.9: "'Project' means the cooperative effort to design, develop, construct, test and operate the LMFBR Demonstration Plant provided for in the Principal Project Agreements." [See para. 3.1] (Emphasis added.)

B. Para. 3.1: [Principal Project Agreements] " * * * TVA and ERDA will enter into an agreement for the operation of the Demonstration Plant" * * * (Emphasis added.)

C. Para. 4.1: " * * * ERDA shall, pursuant to this contract, manage and carry out the Project [see Para. 1.1.9, above] in an efficient, effective and timely manner consistent with the Principal Project Objectives, and shall use its best efforts to design and build the Demonstration Plant substantially in conformance with the Reference Design." * * *

D. Recent ERDA Plans and GAO Evaluation.

On May 19, 1977, Mr. Robert W. Fri, Acting Administrator, ERDA, sent to the JCAE notice of ERDA's plans to revise the CRBRP. Mr. Fri stated, inter alia, ERDA's plans for the

"cancellation of construction, component construction, licensing and commercialization efforts for CRBRP, but completion of systems design;"

This letter clearly recognized that the plan proposed by the President and reflected in the May 18, 1977, deferral message would necessitate revision to the present JCAE-approved CRBRP criteria, and acknowledged that an amendment to the

statutory authorization may be in order if the President's program revision is to be implemented. Mr. Fri stated:

"At the direction of the President, and in compliance with Section 106(b) of Public Law 91-273, as amended, ERDA herewith submits the enclosed amended program justification data reflecting discontinuance of the CRBRP Project, except for completion of systems design so as to help identify engineering problems that will have to be solved in developing alternative types of reactors. The statutory criteria will likewise require commensurate revision.

"Appropriate negotiations will, of course, have to be undertaken and concluded with the other Project participants, with the objective of implementing the proposed action concerning the Project, and the cooperative arrangement arranged accordingly. In addition, ancillary legislation with respect to the basic enabling authorization for the CRBRP Project may be in order.

"For the prescribed statutory period during which this revised basis of arrangement is required to lie before the Joint Committee, new obligations for the Project will be kept to a minimum consistent with prudent Project management. A deferral (No. D77-58) is being reported for the \$31.8 million of CRBRP Project budget authority that will not be available during this period. Following such period ERDA will proceed with appropriate implementing actions."
(Emphasis added.)

In an attachment to his letter, Mr. Fri discussed the existing four-party contractual agreement and those contract amendments that would have to be made in order to limit

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LMFBR activities to systems design efforts. Systems design (roughly 60 percent of the total design work) would, under the President's proposal, be completed. Pursuant to this proposal, ERDA has reduced its fiscal year 1978 budget request from \$208.7 million to \$162 million. The funds requested would be used to continue systems design activities; to terminate detailed design, licensing, procurement, and construction activities; and to settle claims, primarily those anticipated from the termination actions.

Thus far, we have found no evidence indicating that project activity has been significantly slowed down as a result of the executive branch's proposed change in program objectives. To date, we have found no procurement actions that have been delayed or cancelled and ERDA officials told us there were none. However, the project office in Tennessee, at the direction of ERDA headquarters, recently submitted a list of 10 scheduled procurements to ERDA headquarters for approval. According to an ERDA procurement official, the proposed procurement actions involve contracts by Westinghouse, the lead reactor manufacturer, with its subcontractors. The amount involved in these procurements is about \$9.8 million. (Should ERDA decide to prevent award of any of the subcontracts it may develop that further questions will exist regarding such actions in light of the Impoundment Control Act of 1974, discussed below.)

We compared the proposed changes on the Clinch River LMFBR project as submitted by ERDA to the JCAE on May 19, 1977, with the existing criteria. As part of this comparison, we discussed the criteria with the General Manager of PMC (the contract party that represents the utility participants in the project) on a line-by-line basis to pinpoint the specific program changes that would result from the President's actions. Based on our examination, we confirm that ERDA's proposal of May 19, 1977, represents a notice of its intention to proceed with the CRBRP in a way that will result in a program that does not fulfill major objectives of the existing JCAE-approved statutory criteria; nor the object of the authorization itself--to operate an LMFBR demonstration plant.

We asked ERDA officials to give us their estimate of the additional costs that would be incurred assuming ERDA terminated the project, except for systems design, on or about July 26, 1977, and the Congress subsequently provided the

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funds to continue the project on December 1, 1977. We chose a December 1, 1977, date because it allows the Congress an opportunity to consider fully whether to go ahead with LMFBR efforts and the associated funding. Although it is uncertain when the Congress will make its decision on the project, and how quickly or completely ERDA may implement the proposed discontinuance of the program, we believe that the December date provides a good indication of the impact a project termination will have prior to Congress having an opportunity to fully consider the matter.

ERDA provided us with cost and schedule information using three assumptions:

1. Assuming the licensing process could begin where it was stopped, project costs would increase by about \$346 million and plant operations would be delayed between 1 and 1-1/2 years. To restart the project where it was terminated in the licensing process, however, probably would require legislation that would, in effect, circumvent some of the normal licensing processes.
2. Assuming the licensing process would have to begin with a new application, project costs would increase by about \$546 million and plant operation would be delayed over 3 years. Neither this assumption nor the first account for the possibility that ERDA may be required by the Nuclear Regulatory Commission (NRC) to locate the plant at a different site if projected plant operation is delayed. Such a relocation appears to be a distinct possibility based on past NRC proceedings on the Clinch River Project. In fact, the Deputy Director, Division of Site Safety and Environmental Analysis, NRC, told us that if the CRBRP is delayed for 2 years or more, it would be very difficult, if not impossible, for the NRC staff, in its analysis, to conclude that it is cost beneficial to locate the demonstration reactor at the Clinch River site.
3. Assuming the plant would have to be relocated, project costs would increase by about \$1.1 to \$1.3 billion and plant operation would be delayed 5 to 6 years.

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Although we did not have the opportunity to evaluate ERDA's estimates in detail, we believe they provide a reasonable indication of the magnitude of the costs and extent of schedule slippages that might occur if the project were terminated on July 26, 1977, and the Congress decided to restart it at a later date. By comparison, if ERDA were to delay project termination until December 1, 1977, by honoring ongoing contracts but not entering into additional contracts, not essential to ongoing work, the estimated costs would be increased by about \$61 million.

Based on the information set out above, it would seem that terminating the project prior to congressional deliberations could make restarting the project so costly as to outweigh its benefit. Thus, in effect, the executive branch, if it is successful in promptly implementing its present plan, may well have made a major policy decision unilaterally through administrative procedures which should have been made through the legislative process. The documentation we have examined discloses no intention on the part of the executive branch to proceed with completion of an LMFBR demonstration plant at Clinch River in the future.

II. THE IMPOUNDMENT CONTROL ACT OF 1974:

Under the Impoundment Control Act of 1974 (Act), title X of Public Law 93-344, 88 Stat. 332, July 12, 1974, 31 U.S.C. 1400, et seq., there are two types of impoundments--deferrals and rescissions. The distinction between the two categories is the duration of a proposed withholding of budget authority: a deferral is a proposal to withdraw temporarily budget authority from availability for obligation; a rescission is a request to cancel, i.e., rescind, previously appropriated funds--in other words, a permanent withdrawal of budget authority.

In both categories of withholdings there exists a common characteristic--impoundment. While the term "impoundment" is not defined by the Act, we have operated under the view that an impoundment is any type of executive action or inaction that effectively thwarts the obligation or expenditure of budget authority. This does not mean, however, that impoundments always exist when budget authority is not used to implement all authorized activities.

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The Act is concerned with the rescission or deferral of budget authority, not the rescission or deferral of programs. Thus, a lump-sum appropriation for programs A, B, and C used to carry out only program C would not necessarily indicate the existence of impoundments regarding programs A and B. So long as all budgetary resources were used for program C, no impoundment would occur even though activities A and B remained unfunded.

Consistent with this construction of the Act, sections 1012(b) and 1013(b) of the Act, 31 U.S.C. 1402(b) and 1403(b), respectively, provide that when proposed rescissions and deferrals are rejected the impounded budget authority must be "made available for obligation." If this is not done the Comptroller General is authorized to bring suit to compel the cessation of the withholding, 31 U.S.C. 1406. In this connection, the requirements of the Act clearly are to mandate the release of withheld funds. Significantly, no mention is made in the Act with respect to the uses to which the released funds are put. The Comptroller General can only seek, and the court can only grant, an order compelling the President to release the funds. Neither the Comptroller General nor the courts are authorized under the Act to constrain the executive branch in the way the funds are to be used once released.

Concerning the CRBRP, we have determined that, except for the \$31.8 million held in reserve for deferral D77-58, all funds have been made available for obligation for either incurring or liquidating obligations associated with the project. Regarding the \$31.8 million proposed for deferral, these funds also are planned for use. That available funding is being and will be used is the critical determination under the Act. In this light, we must presently conclude that no evidence suggests an intention not to utilize (i.e., a rescission) the \$31.8 million in the future. Thus, we are satisfied that the deferral has been properly classified. However, should we later determine that the executive branch has altered its plans for the use of the \$31.8 million and has decided that a portion of the funds will not be used at all, we will, at that time, take the necessary action to reclassify the impoundment to a rescission.

In addition we are monitoring the executive branch's handling of the \$9.8 million involved in the award of subcontracts currently being reviewed by ERDA. If we decide

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that ERDA's actions regarding the use of these funds or any other CRBRP funds indicate the existence of further budgetary withholdings, we will promptly report the matter to the Congress.

III. PROPRIETY OF THE REVISED CRBRP PLANS:

The President's plans to curtail substantially the scope of the LMFBR program at the Clinch River site raise a number of questions that focus upon the legislation that authorized the project. Our analysis of the statutes setting forth the LMFBR activities of AEC and later ERDA is that they authorize the AEC (ERDA) to embark only on clearly delineated lines of effort. In 1969 the effort was to define what ultimately might comprise an LMFBR demonstration project cooperative arrangement. With enactment of the 1970 and 1975 legislation, AEC (ERDA) was authorized to enter into agreements for the research and development, design, construction, and operation of such a reactor.

We conclude that ERDA's proposed expenditure of funds for the curtailed LMFBR program is an intention to expend funds for unauthorized purposes. The most recent (1975) revisions of section 106 of the CRBRP authorization, quoted above, introduced the requirement of JCAE approval of LMFBR program criteria. We believe subsection 106(a) incorporates by reference into the statute itself the program criteria submitted to and approved by the JCAE. In our view, and we know of no other that contradicts it, the approved program criteria and the major objectives set forth therein are as much a part of subsection 106(a) as if they were explicitly stated in the statutory language itself. Thus, the currently approved program criteria, and of course the statute itself, establish the CRBRP's ultimate objective--to successfully complete, operate, and demonstrate the usefulness of an LMFBR powerplant.

Subsection 106(b) provides for a 45-day period of waiting during which time the basis or description of a proposed amendment to the cooperative arrangement must lie before the JCAE. This delay, prior to ERDA's executing the amendment it proposes, affords the JCAE and others time to express views on the specific means by which ERDA would accomplish the statutory objective of the program. We believe the proposed amendments contemplated by subsection 106(b) are only those the execution of which lead to fulfilling this goal.

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This construction of section 106 is supported both by the language of the statute and by its legislative history. Subsection (b) of section 106 provides not only that the basis or description of the amendment shall lie before the JCAE for 45 days, but also that the amended cooperative agreement ERDA is authorized to execute after the 45-day period is to be entered into "under the authority of subsection (a) of this section." Subsection (a) authorized ERDA to enter into cooperative agreements only in accordance with the statutorily approved program criteria. Those criteria, effectively a part of the statute itself, contemplate the eventual operation of an LMFBR power-plant. Therefore, ERDA's authority to initiate the running of the 45-day period after which it may proceed to implement its plans to amend the cooperative agreement, is constrained to offering to the JCAE a basis or description of amendments that are compatible with the objectives of the program criteria and of course the harmonious objective of the authorization act--operating an LMFBR demonstration plant.

Our construction of section 106 is supported as well by discussions of the JCAE. For example, during debate on the most recently submitted project criteria, the following exchange took place between Representative Moss and Mr. William Parler, Committee Counsel, JCAE:

"Representative Moss. If there is a conflict between the contract [the cooperative arrangement] provisions and the criteria, which controls?

"Mr. Parler. The criteria and the justification data which the committee [JCAE] approved.

"Representative Moss. In other words, at all times that becomes the dominant factor in interpreting any contract [for the CRBRP]? It must be consistent at all times with the criteria?

"Mr. Parler. That is my opinion, Mr. Moss; Yes, sir." 1976 Hearings, page 4.

Moreover, on April 29, 1976, Mr. Parler said:

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"* * * If the Committee [JCAE] dis-
approves the criteria, ERDA cannot proceed
with implementation of the modification to
the contract." 1976 Hearings, page 521.

In meeting with ERDA representatives on the President's plans to revise the CRBRP objective, we discussed the agency's reading of section 106. ERDA views subsection 106(b) as a requirement that it begin to implement its plans for proposed amendments, after the expiration of the 45-day period during which the bases for those amendments will have laid before the JCAE, irrespective of whether such action supports or destroys the objective of the authorization act. And, because subsection (a) of section 106 does not provide explicit time periods for either ERDA's submitting or the JCAE's approving new program criteria, subsection (a) "defers" to subsection (b). Thus, ERDA believes that its letter of May 19, 1977, was in compliance with the statutory mechanism of subsection (b) and it will, at the end of the 45-day period that began May 19, 1977, trigger both the necessary authority and the obligation to implement its revised plans to curtail the CRBRP. ERDA officials did not disagree that ERDA presently has no authority to revise the document representing the cooperative arrangement in ways that are inconsistent with existing statutory criteria, but apparently believe ERDA may effectively implement its plans without at the same time constructively revising the cooperative arrangement, an arrangement that calls for accomplishment, not termination, of the CRBRP.

In sum, ERDA views section 106 as conferring authority to begin implementing the cancellation of portions of the CRBRP 45 days after appropriate notice to the JCAE, but also requires that before ERDA formally modifies its contractual document it obtain from the JCAE approval of ERDA's proposed new program.

The practical consequences of ERDA's construction of the law deny the JCAE oversight of the LMFBR so long as the agency does not enter into a fully executed amendment of the formal contractual document. Such construction disregards the wide-ranging and very concrete changes that must be wrought upon the operation of the approved LMFBR program before implementation of the President's plan. ERDA apparently professes to read the relevant statutory language as indicative of congressional disinterest in whether ERDA unilaterally proceeds to change the statutory objective of the program. The simplest reading of

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that language is to the contrary--that Congress has a strong interest in maintaining the program objective fully in accord with criteria approved by a committee of Congress. ERDA assumes, we think without a sound basis, that the actions it takes preparatory to abandoning the program it has commenced will not be tantamount to an amendment of the cooperative agreement that represents the commitment to go forward with the original program, and therefore that the actual changes, however dramatic, need not be of concern to the JCAE. This view limits the Committee's role to deciding whether to acquiesce in ERDA's subsequent recommendation to change the statutory criteria after ERDA's actions to change the statutory objective are already effectively accomplished, and appropriated funds are already obligated for the purpose of discontinuing instead of fulfilling the program objective of the statutory criteria.

We cannot agree the law was intended to so operate. Our view, as we have stated, is that before ERDA can invoke the authority of subsection (b) to implement new plans that depart in any significant way from the major program objectives of the statutorily approved criteria, it must first, under subsection (a), secure JCAE approval of new criteria. Since we believe section 106(b) contemplates amendments the thrust of which is to fulfill the major objectives of the statutory criteria, we must also conclude that, because the May 19, 1977, proposal does not so accord with the criteria, it did not trigger the 45-day mechanism of section 106(b).

Moreover, while the JCAE's authority to approve criteria is broad, the statute under which the President is acting authorizes only efforts leading to the construction and operation of a reactor. Thus, the President would be compelled to obtain amendatory legislation to section 106 to authorize only the limited and different objective of LMFBR systems design, and to repeal those parts of the statute that speak to efforts beyond such activities.

The legal effect of this conclusion is that the status of the CRBRP remains unchanged, except for the current \$31.8 million deferral now before the Congress. Federal funds may not be expended to implement the President's plan of curtailing the program, without appropriate change in the authorization statute and the program criteria.

To implement the President's plan without such necessary authority would be in violation of law since such expenditures would be for purposes inconsistent with those for which the appropriations were made. In this regard, 31 U.S.C. 628 provides:

"Except as otherwise provided by law, sums appropriated for the various branches of expenditure in the public service shall be applied solely to the objects for which they are respectively made, and for no others." (Emphasis added.)

We hope the foregoing responds to your questions. A similar letter today is being sent to Senator Baker.

Sincerely yours,

(SIGNED) ELMER B. STAATS

Comptroller General
of the United States



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

November 2, 1978

IN REPLY
REFER TO: E-164105

The Honorable Howard H. Baker, Jr.
United States Senate

Dear Senator Baker:

This replies to your October 23, 1978, letter requesting our opinion on the uses to which the funds provided under section 101(b) of H.J. Res. 1139, the Continuing Appropriation, 1979, enacted on October 18, 1978, as Pub. L. No. 95-482, can be put in connection with the Clinch River Breeder Reactor Project (CRBRP). You state, based upon a staff analysis submitted as an enclosure to your letter, that enactment of section 101(b) did not alter the status quo regarding the uses to which CRBRP funding could be put or prior decisions of this Office concerning this issue. Thus, you contend that any funds provided under the Continuing Appropriation for the CRBRP are governed by the same statutory limitations as were prior appropriations for the project.

Section 101(b) provides appropriations in --

"[s]uch amounts as may be necessary ***
for [fiscal year 1979] for programs,
projects, and activities to the extent
and in the manner provided for in the
Energy and Water Development Approp-
riation Act, 1979 (H.R. 12928) as enacted
by the Congress: Provided [that no funds
shall be available for certain water
projects]***."

As indicated by the legislative history of the vetoed Energy and Water Development Appropriation Act, 1979, H.R. 12928, that bill, if enacted, would have provided funds for the CRBRP under the appropriation heading "Operating Expenses." See, for example, H.R. Rep. No. 95-1247, 40-41 (1978); and H.R. Rep. No. 95-1490, 6 (1978).

Our analysis of H.R. 12928 and its history is that the congressional committees identified \$172.4 million for carrying out the CRBRP during fiscal year 1979 and that these funds were contained in a lump sum appropriation of \$4.8 billion for the Department of Energy under the heading "Operating Expenses".

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Enactment of section 101(b) of H.J. Res. 1139 was clearly intended to implement the vetoed appropriation bill H.R. 12928, except, of course, with respect to specified water projects and activities. See for example, S. Rep. No. 95-1317, 5 (1978). Thus, enactment into law of the joint resolution operated, in turn, to appropriate to the Department of Energy \$4.8 billion under the heading "Operating Expenses."

We further conclude that, if used for the CRBRP^{*/}, the funds must be applied in accordance with the existing statutory authorization for the project (section 106 of Pub. L. No. 91-273, as amended by section 103(d) of Pub. L. No. 94-187) as construed in opinions of this Office dated June 23, 1977, December 5, 1977, and March 10, 1978, (copies enclosed). In this connection, we note that during the second session of the 95th Congress, the Congress considered, but did not enact, legislation authorizing the Executive branch to use funds appropriated for the CREPP to curtail substantially the project. See for example, S. 2962 (95th Cong.) and related legislative history.

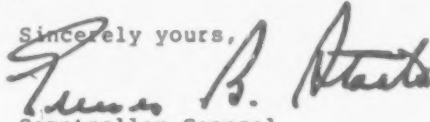
Thus, we agree with your analysis. That is, until legislation or other congressional action modifying the CREPP statutory basis is enacted, the above-mentioned statutes and Comptroller General opinions will continue in their effect and any funds provided by the continuing resolution for the project will be governed thereby.

^{*/} The identification of \$172.4 million for CREPP funding as part of the lump-sum "Operating Expenses" appropriation under H.R. 12928 is reflected only in the committee reports and not the appropriation language. Thus, in a strict legal sense, the \$172.4 million could conceivably be "re-programmed" to another purpose within the Operating Expenses account. See, e.g., LTV Aerospace Corporation, 55 Comp. Gen. 308, 325 (1975). The legal restrictions discussed in the text therefore are applicable only to the use of 1979 Operating Expenses funds in connection with the CREPP.

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As agreed with Mr. Charles Trabandt of the staff of the Senate Committee on Energy and Natural Resources, we will respond separately to your request for an audit of the financial status of the CRBRP.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "James B. Stacks". The signature is written in a cursive, slightly stylized font.

Comptroller General
of the United States

Enclosures



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

IN REPLY
REFER TO:

B-164105

December 5, 1977

The Honorable Olin E. Teague, Chairman
Committee on Science and Technology
House of Representatives

Dear Mr. Chairman:

This replies to your letter of November 23, 1977, requesting our opinion as to the purposes for which funds contained in H.R. 9375 for the Clinch River Breeder Reactor Project might be used should the bill be enacted into law. In essence, the question is whether the President may properly use such funds to terminate the project or carry it forward on a basis different from that prescribed in the initial authorizing legislation.

The bill, making supplemental appropriations for fiscal year 1978, provides simply that:

"[of the amount appropriated] \$80,000,000
shall be for the Clinch River Breeder Reactor
Project."

There is no existing legislation authorizing the appropriation of any sum for the project. The project itself was authorized, however, by section 106 of P.L. 91-273, as amended by section 103(d) of P.L. 94-187. In conjunction with authorization of the project, section 106 authorized appropriations for its implementation, but only through September 30, 1976.

Section 106 specifies stringent conditions governing the manner in which funds appropriated for the Clinch River project must be used. We have previously considered the extent to which section 106 constrains the purposes for which funds appropriated to carry out the project may be used and have concluded that the provisions of the section are controlling. See our letter of June 23, 1977, to Senator Henry M. Jackson as Vice Chairman of the Joint Committee on Atomic Energy, copy enclosed, in which we conclude that by reason of the provisions of section 106, the President may not curtail or terminate the Clinch River project.

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The question you pose arises as a result of the lapse of authorization for appropriations to carry out the project and is somewhat complicated by reason of the President's veto of S. 1811, the "ERDA Authorization Act of 1978--Civilian Applications." The vetoed measure would have extended the authorization of appropriations for Clinch River through fiscal year 1978 and, further, would have emphasized in express terms the congressional mandate that any funds appropriated pursuant to authorization for the project be used only in conformity with the project authorization provisions and not for its cancellation or termination.

Had the President not vetoed S. 1811, there would be no question but that the \$80 million contained in H.R. 9375 would have to be construed as being in furtherance of the appropriation authorization provided and subject to the constraints set forth. Aside from extension of the authorization for appropriations, however, the vetoed measure did not in any way touch upon the operative effect of section 106, referred to above, providing the basic authority for carrying out the Clinch River project except to emphasize congressional concurrence in its legal effect as previously construed in our letter to Senator Jackson. In other words, we do not consider that the substantive provisions of S. 1811 materially affected the project authorization requirements of section 106 and, but for the appropriation authorization provisions it contained, its failure of enactment into law had no significant effect on the Clinch River project.

The issue that we come down to, then, is whether an appropriation of \$80 million for "the Clinch River Breeder Reactor Project" may somehow be construed as an appropriation for some other project than the one authorized by section 106 on the sole ground that the appropriation is not preceded by an authorization therefor.

In our view, there is not the slightest justification for considering the funds contained in H.R. 9375 for "the Clinch River Breeder Reactor Project" as being unrestrained by the provisions of section 106. There is only one project that conceivably can come under that name and there is no legislation which removes the project from the constraints of section 106 relating to it. Any doubt as to identification of the project for which the \$80 million is being provided is

B-164105

utterly dissipated by reference to legislative history throughout which there was continuing concern over the legal effect of providing the funds without prior appropriation authorization. The fact, however, that an appropriation of funds to carry out the project will have been enacted without prior legislation authorizing the appropriation is of no consequence given the clear identification in the appropriation language of the purpose for which the funds are being provided.

Accordingly, we conclude that the Executive Branch must use the funds to be provided by H.R. 9375 pursuant to the requirements of section 106 as discussed in our letter to Senator Jackson. Failure to do so would constitute contravention of section 628 of title 31, United States Code, which provides that:

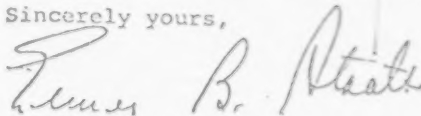
"Except as otherwise provided by law sums appropriated for the various branches of expenditure in the public service shall be applied solely to the objects for which they are respectively made, and for no others." (Emphasis added.)

Should the Executive Branch, without further authority, use the funds provided in a way that does not accord with section 106 requirements we will have to consider whether the taking of formal exception to such expenditures would be appropriate.

Finally, we point out that the President's exercise of the authority granted to him by the Impoundment Control Act of 1974 is a matter wholly independent of the issues raised by using H.R. 9375 budget authority. Should rescission or deferral of all or part of the \$80 million be proposed to the Congress pursuant to the Impoundment Control Act of 1974, the Congress will, at such time, have an opportunity to take whatever action it might deem appropriate in response thereto.

We hope the foregoing will be of assistance to you.

Sincerely yours,



Comptroller General
of the United States

Enclosure

Mr. BROWN [presiding]. Are there any additional questions from any member of the committee?

Mrs. BOUQUARD. Mr. Chairman, I would like to point out that the net revenues for electricity from CRBR were given in fiscal year 1982 dollars. Is it not necessary that that differs from present-worth discounts? I do appreciate Mr. Ertel asking for more detail on this and the project costs are in year of expenditure dollars.

Thank you very much.

Mr. BROWN. Mr. Gates, one final point occurs to me. Is there any intention on the part of the Department to enter into any additional contracts during the current fiscal year on the Clinch River breeder?

Mr. GATES. May I ask the project manager to address that?

Mr. CAFFEY. Mr. Chairman, in view of the fact we are continuing on our schedule for design completion of this project, and that design completion does require getting some information from hardware suppliers which we do not have, we will be entering into some contracts for that kind of purpose, but not permitting the fabrication of hardware to continue, except with respect to some contracts where the prime-level suppliers for one of our contractors must get our approval for a subcontract to keep his work going; in other words, we would also enter into a sub-sub kind of contract, so that our fabrication will not be delayed when we face penalty clauses.

Mr. BROWN. Would you be kind enough to supply to the committee as accurate a listing as you can of the additional contracts that you are referring to, with a rough indication of the amount of money involved.

Mr. CAFFEY. We shall.

[The information follows:]

The contracts planned for replacement during the remainder of fiscal year 1981 have an estimated total value of \$88.6 million, of which only \$15.8 million is planned to be obligated by September 30, 1981.

A listing of these contracts, the name of the company which will place them, and the reason for placement is as follows:

Contracts to be placed by General Electric: Pneumatic Valve and Cylinder; 5 Motors; Harnesses; Side Rail Frames; Bellows; Boron Carbide Pins; Connection Plate; Grippers and Latch Housing.

The above procurements are required for continued support of the Secondary Control Rod System (SCRS) fabrication.

Stone and Webster: Normal Cooling Towers; Auxiliary Pumps Nuclear; Fans, Vane Axial; Sanitary Waste Treatment Equipment; Nuclear Shop Fabricated Tanks; Hydrogen Storage System; Carbon Dioxide Supply System; 161KV Power Line Carrier Equipment; Building Elevators; Air Conditioning Units Air Handling Units; Filter Units, Nuclear; Fire Pump; Air Compressors; Non-nuclear Sump Pumps; Penetration Assemblies; Miscellaneous Cranes and Hoists—Single Overhead-A; Waste Water Treatment Equipment; Field Fabricated Tanks Non-nuclear; Auxiliary Pumps Non-nuclear; Fans, Centrifugal; Non-nuclear Strainers; Air Dryers; Horizontal Turbine Type Pumps; Non-nuclear Shop Fabricated Tanks; Low Pressure Fans.

Westinghouse: Flux Monitor System (FMS).

The above procurements are needed now for subsequent testing with the plant protection system.

Burns and Roe: Non-nuclear Butterfly Valves; Nuclear Control Valves; Diesel Generator; Nuclear Butterfly Valves; Main Power Transformer; Non-nuclear Control Valves; Neutral Grounding Reactor.

For the above procurements, design only will be released initially to support ongoing engineering activities.

Burns and Roe: Emergency Plant Service Water Pumps; Miscellaneous Cranes and Hoists—Overhead-B; Gas Coolers.

For the above procurements, design only will be released initially to support ongoing engineering activities.

Mr. OTTINGER. On that information, I want to know what contracts, what these contracts are for, and whether there is a legal obligation on the Government to enter into those contracts.

Mr. CAFFEY. These contracts would not have a legal obligation if they are entered into to acquire design information. That purpose would be, then, our getting that design information. If we have to enter into a hardware supply contract for hardware which is already under contract and in process, if we were not to support that kind of contract, then we would be frustrating our supplier and we would have an obligation to keep him going or bear the consequence of cost.

Mr. OTTINGER. That is what I would like to know, on each one of the contracts. You are going to try to supply us with the design work as well as what is generic that might be useful in future breeder reactors.

Mr. CAFFEY. That is correct.

[The information follows:]

Of the procurements planned for placement during the remainder of fiscal year 1981, the procurements which would provide generic benefit to the future LMFBR Program in the event of CRBRP termination, are listed below:

Contract to be placed by General Electric: Pneumatic Valve and Cylinder.

Contract to be placed by Atomics International: Components Support Structure Assembly.

Contract to be placed by Westinghouse: Flux Monitor System.

Contracts to be placed by Burns and Roe: Non-nuclear Butterfly Valves; Nuclear Control Valves; Diesel Generator; Nuclear Butterfly Valves.

Contracts to be placed by Stone and Webster: Filter Units, Nuclear; Penetration Assemblies; Gas Coolers.

Mr. BROWN. May I just offer my comment that I do not envy the Department of Energy having to proceed with this project at this time during the past several years when there was considerable doubt as to exactly what was desired by the Government of the United States. It would place considerable difficulties on any organization, I would think.

If there are no further questions, the committee will be adjourned until 9:30 a.m. tomorrow morning, when it will continue with the markup of the EPA-NOAA-FEMA authorizing legislation.

The committee will be adjourned. Thank you all very much for your attendance.

[Whereupon, at 4:46 p.m., the committee adjourned.]

APPENDIX

ADDITIONAL MATERIAL FOR THE RECORD

JOHN J. KEARNEY, Senior Vice President

EDISON ELECTRIC INSTITUTE

The association of electric companies

1111 19th Street, N.W.
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Tel: (202) 828-7400

May 13, 1981

The Honorable Don Fuqua
Chairman
Committee on Science & Technology
U.S. House of Representatives
2321 Rayburn House Office Building
Washington, D. C. 20515

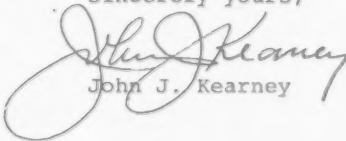
Dear Mr. Chairman:

Attached is a statement which I would appreciate having incorporated into the record of the May 11 hearings, which addressed the costs associated with the termination of the Clinch River Breeder Reactor Project. You may recall that I briefly related the substance of this position at the hearings and asked for permission for a more substantive treatment to be incorporated into the record.

During the course of the hearing, Congresswoman Schneider asked that I supply, for the record, information regarding the last payment Project Management Corp. made to the Department of Energy. Please be advised that the last payment to DOE by PMC was made in January 1977, completing payments of the 1976 installment of funds then due under the project agreements.

Thank you for the opportunity to present our views.

Sincerely yours,


John J. Kearney

JJK:jam
Attachment

CLINCH RIVER BREEDER REACTOR

STATEMENT BY

MR. JOHN J. KEARNEY
SENIOR VICE PRESIDENT
THE EDISON ELECTRIC INSTITUTE

BEFORE THE

COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

MAY 11, 1981

Mr. Chairman and Committee Members, I am John J. Kearney, Senior Vice President of Edison Electric Institute. The Institute is the association of investor-owned electric utilities. Its members provide about 78% of the nation's electricity, serving over 67 million customers. Acting through Breeder Reactor Corporation ("BRC") and Project Management Corporation ("PMC"), the organizations through which the entire electric utility industry has contributed to the development of the Clinch River Breeder Reactor, the Institute's members have contracted to provide more than \$200 million in support of the project out of a total industry commitment of about \$257 million. This total commitment is the largest commitment in history by the electric utility industry to a single research and development project.

The commitment was undertaken in direct response to Federal Government initiatives designed to develop fast breeder reactor technology, particularly liquid metal fast breeder reactor technology. The Clinch River Breeder Reactor is and always has been primarily a Federal Government project forming

the centerpiece of a program designed to provide for the nation's long-term electric energy needs. Because of its critical importance to supplying the future electric demands of the customers our industry serves, the project has always had, and continues to have, the wholehearted support of the electric utility industry.

The importance of the breeder reactor program in the Federal Government's energy planning was pointed out almost 20 years ago in an AEC Report on Civilian Nuclear Power commissioned by President John F. Kennedy. The AEC Report concluded that the Government "must take the lead" in making breeder reactors technologically and economically attractive and that such work should put "added emphasis" on stimulating industrial participation in the development and demonstration of breeder reactors. The conclusions of the 1962 Report were reaffirmed in a 1967 Supplement to the 1962 Report, also prepared by the AEC. In fact, the review of the civilian power program that culminated in the 1967 Supplement established the LMFBR program as the highest priority civilian power program.

In 1968, an LMFBR Program Plan was issued which included the design, construction, and operation of a demonstration plant on an electric utility grid.

In 1969, Congress authorized funds for the Definition Phase of a project to design, develop, and operate a LMFBR plant on a utility's electric grid in cooperation with reactor manufacturers and others (Section 106 of AEC Authorization Act, P.L. 91-44, 83 Stat. 46). The Report of the Joint

Committee on Atomic Energy ("JCAE") which accompanied the legislation noted that the AEC's studies had led to the establishment of the LMFBR developmental efforts as the AEC's highest priority civilian nuclear reactor program (S. Rep. No. 91-315, 91st Cong., 1st Sess., 22 (1969)).

In 1970, Congress took another step toward the goal of constructing a demonstration plant by authorizing the AEC to proceed from the Project Definition Phase to the Definitive Cooperative Arrangement Phase of the LMFBR Demonstration Plant described in paragraph 11, Section 106 of AEC Authorization Act (P.L. 91-273, 84 Stat. 299).

The AEC, having found in the Project Definition Phase that the financial implications of the proposed program were too extensive to permit reliance upon reactor manufacturers alone, turned to the entire electric industry for assistance and support in the design, construction, demonstration and operation of a demonstration plant. Utility support for such an effort was solicited by the AEC. Support was provided by the utilities because the long-range purpose of the effort was to demonstrate the LMFBR technology's effectiveness as an integral part of an electric utility system, thereby accelerating the transition of the technology to the stage of large-scale commercialization.

In response to requests from the AEC, the Edison Electric Institute ("EEI"), the American Public Power Association, and the National Rural Electric Cooperative Association surveyed

their respective members during 1971 as to their interests in supporting an LMFBR demonstration plant by means of firm commitments of contributions. By January, 1972, EEI had received pledges of \$200,000,000 from investor-owned utilities, the American Public Power Association had commitments of approximately \$40,000,000 from publicly-owned utilities, and the National Rural Electric Cooperative Association had pledges of \$4,000,000 from rural electric cooperatives. When the solicitation of commitments was finally completed, the total had increased to \$257 million from 753 utilities.

Project development proceeded rapidly in the period 1972-1976. Cooperative contractual arrangements with the Federal Government were entered into in 1972 by the utility participants in the project. The agreements were modified in May, 1976 to establish the Energy Research and Development Authority of the Federal Government as manager of the CRBR project in exchange for ERDA's undertaking to,

" . . . manage and carry out the Project in an efficient, effective and timely manner consistent with the Principal Project Objectives, . . . [using] its best efforts to design and build the Demonstration Plant substantially in conformance with the Reference Design."

Utility personnel were assigned to work on the project, and, as of September 30, 1981, PMC will have paid out about \$113.3 million to finance project costs, as Mr. Caffey has testified.

The Carter Administration abruptly withdrew its support from the Clinch River Breeder Reactor Project in early 1977 and

took every measure within its power thereafter to terminate the project, despite its obligations to go forward in accordance with the project agreements. These actions and inactions by the Carter Administration materially breached the project agreements. Nevertheless, the utility industry has urged the Administration and Congress to complete the design, construction and operation of the CRBR; and I have every reason to expect that the industry will support the project, if it goes forward to completion and operation.

Although, as the industry has repeatedly stated, we believe the completion of the Clinch River Project should be the next step and is a most important step in assuring that our nation has access to breeder reactor technology on a timely basis, we recognize that the action taken by this Committee on May 7 requires that we give careful thought to the consequences of termination of the CRBR and of the financial loss and damage which would be incurred by the electric industry in the event of ultimate termination by the Government.

While I have not had an opportunity to consult the past few days with the industry representatives and project participants who must be involved in such discussions if the Project is ultimately terminated, I have had an opportunity to confer briefly with executives of the Project Management Corporation, and Mr. Caffey, the project manager for D.O.E. .

At the very least, loss and damage incurred by the utilities as a result of termination would include return of the utility monies applied to the project, with interest, plus the cost of winding up the activities of PMC and BRC.

I point out, however, that Mr. Caffey's estimate of utility funds used to finance project costs through Fiscal Year 1981 of \$113.3 million makes no provision for the settlement of additional potential claims resulting from cancellation of the project. For example, it includes no provision for interest on funds paid into the project by the utilities. It makes no provision for additional wind-up costs incurred by PMC and BRC after the close of Fiscal Year 1981. Mr. Caffey's estimate does not make provision for contributions of services in kind to the project by certain utilities.

Mr. Caffey's estimate also excludes consideration of the adverse impact upon investments already made in nuclear power facilities which would result from a Government decision not to proceed with the CRBR. Furthermore, it does not recognize that the failure to deploy the breeder in the reasonably near future, which would be very difficult without the CRBR, would have a detrimental impact on our future economy.

While I suggest that the foregoing are elements of loss and damage which the utilities must consider in dealing with the problems created by ultimate termination of the project, I must add that I have not had an opportunity to consider and discuss these elements of loss and damage with other representatives of the utility industry and there has not yet been any consensus reached by industry representatives concerning aggregate losses and damage; but I believe that your Committee should consider the elements I have noted in making decisions regarding the CRBR project.

As I stated before a Subcommittee of this Committee in March, our industry continues to be firmly convinced that breeder reactors, including the Clinch River facility, must be developed as a long-term fuel resource for the production of electricity.

In closing, I feel compelled to point out my concern that failure to complete the design, construction, and operation of the Clinch River Breeder Reactor Project may effectively terminate any meaningful breeder reactor development program and will, therefore, truncate and perhaps cripple the nation's entire nuclear power production program.

SUMMARY OF ACTIONS ON CLINCH RIVER BREEDER REACTOR PROJECT FOLLOWING HEARING
HELD BY THE COMMITTEE ON SCIENCE AND TECHNOLOGY

Following hearings on the Department of Energy Authorization budget request for FY 1982, which included a hearing on the Clinch River Breeder Reactor (CRBR) project, the Committee on Science and Technology met on May 7, 1981 and reported out H.R. 3146. At this final mark-up, an amendment was offered and passed providing \$44.5 million to meet projected termination costs for CRBR in FY 1982 and setting aside an additional \$50M for generic design activity. In response to the budget reconciliation instructions, the Committee reported its actions as contained in H.R. 3146 to the House Budget Committee on June 11, 1981.

The Omnibus Reconciliation Act of 1981, H.R. 3982, included the bill reported by the Committee. On June 26, 1981, the full House passed the Gramm-Latta amendment to H.R. 3982 which contained provisions for funding CRBR at \$230 million in FY '82 in place of the CRBR deauthorization language. The Senate reconciliation bill includes \$254 million in funding for CRBR. The House-Senate conference on this bill agreed to \$228 million for CRBR. This was passed and signed into law on August 13, 1981.

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June 10, 1981

The Honorable Don Fuqua
Chairman
Committee on Science and
Technology
U.S. House of Representatives
2321 Rayburn House Office Building
Washington, D. C. 20515

Re: Department of Energy FY 1982 Authorization
Clinch River Breeder Reactor

Dear Mr. Chairman:

At the Committee's hearing on May 11, 1981, a number of questions were raised regarding the legal and financial consequences of Government withdrawal from the Clinch River Breeder Reactor Project. As you know, the matter may result in litigation because of the Government's breach of its contractual undertakings regarding the Project. Because we hope the Government will ultimately go forward with the Project, in keeping with its contractual undertakings, we are loathe to take any step that might be construed to indicate any waning of utility support for the Project. Nonetheless, we appreciate your Committee's interest in assessing the Government's potential liability arising from its breach and in the event such breach is not cured. With these thoughts in mind, I am pleased to furnish the following information on behalf of Breeder Reactor Corporation. However, I would caution that my comments should not be understood as speaking for any individual utility or as a complete or in any sense final statement of our position on the issues, since the Board of Directors of BRC has not yet addressed the specific elements of damages it would seek in the event of litigation with the Government. We naturally reserve the right to assert any and all claims on behalf of our client that are cognizable at law or in equity.

The Honorable Don Fugua
Page Two
June 10, 1981

On page 57 of the transcript, Representative Bouquard asked for "an assessment of all . . . contingent liabilities," referring to the Government's legal exposure. In response, we can indicate that in the event of litigation, we anticipate seeking the following elements of relief:

Return of all funds contributed to the Project with interest thereon from the date of contribution to the Project;

Damages corresponding to the goods and services furnished to the Project in kind, with interest from the date of contribution;

RMC/BRC wind-up costs;

Reimbursement of PMC/BRC in the event they are sued by third parties as a result of cancellation of the Project; and

Damages in an amount equal to the financial loss accruing because of the delay or cancellation of breeder technology that would have benefited utilities in the future.

Of these five elements of recovery, only the first three have been estimated at this time. I am advised that, as of April 30, 1981, the utilities have paid \$107 million in cash and approximately \$3.2 million in goods and services directly to meet costs of design, procurement, and administration. Other indirect costs have been incurred to organize and operate the organizations, PMC and BRC, which have served as vehicles for utility participation in the Project. These costs exceed \$2,500,000. PMC and BRC wind-up costs occasioned by Project cancellation are estimated at approximately \$500,000, but may be as high as \$1 million. We have not calculated the interest due on utility payments, although obviously it would be a substantial sum, probably exceeding \$40 million.

On page 70 of the transcript, Representative Ertel inquired as to how much more of a contribution the utilities currently owe. On the same page Representative Schneider asked that we "respond for the record," presumably to Mr. Ertel's question. This question reflects, with respect, a misreading of the contractual arrangements. BRC has repeatedly advised the Government that the Government's actions over a period of several years represent a continuing material breach of the contract. A breach such as that committed by the Government, in our view, at the very least suspends the obligation of the utilities to make further contributions. The contract

The Honorable Don Fuqua
 Page Three
 June 10, 1981

is very specific about the circumstances under which the termination provisions come into play; an absence of good faith, best efforts on the part of the Government to keep the Project moving forward is not one of the stated bases for "termination"; rather, it is a case of breach, pure and simple. In the circumstances, I believe that a court, faced with an allegation that the utilities had a further obligation to contribute to the Project to meet "termination" costs in the face of the material Government breach, would reject the argument as too brash to warrant serious consideration. See, e.g., Weir v. United States, 200 Ct. Cl. 501, 474 F.2d 617, 520, cert. denied, 414 U.S. 1066 (1973). As a consequence, it would be imprudent, in calculating the Government's "close-out" cost exposure, to assume that there will be any further utility contributions which would serve to reduce the cost of the close-out occasioned by the Government's breach. The utilities have no obligation to fund the Government's breach.

Finally, on page 74 of the transcript, Representative Schneider asked for the date of the last payment by PMC. As stated in Mr. Kearney's letter of May 13, the last such payment was made to the Government in January 1977. Thereafter, payments were withheld by Project Management Corporation because of the Government's material breach of the Project Agreements. I should add that monies presently held by PMC are solely within the control of PMC and are not held "in escrow", as several Members appeared to believe.

I trust this information will be of assistance.

Sincerely yours,


 Carl D. Hobelman

cc: Jack J. Kearney



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ENERGY AND MINERALS
DIVISION

MAY 4, 1981

B-199272

The Honorable Claudine Schneider
The Honorable George E. Brown, Jr.
The Honorable Vin Weber
The Honorable Howard Wolpe
House of Representatives

Subject: Response to questions clarifying a
previous GAO report on the Department
of Energy's breeder reactor program
(EMD-81-83)

Enclosed are answers to the seven questions contained in your April 23, 1981, letter asking us for clarification of certain information contained in our report entitled, "U.S. Fast Breeder Reactor Program Needs Direction," EMD-80-81, dated September 22, 1980.

In reading the responses to your questions it is important to realize, however, that the September 1980 report was prepared at a time of intense debate among Congress and Executive Branch officials as to what was the best way to proceed with the breeder reactor program, in general, and whether to build the Clinch River plant, in particular. After weighing the evidence on both sides of the debate, we concluded that if the Nation wanted to maintain a strong breeder reactor program the time had come to build a plant and demonstrate the viability of the technology. If not, we thought Congress should consider terminating the program. In essence, from a program development and management point of view, we concluded it was time to either develop a serious program effort or move to phase out the program. Consequently, our earlier report and our answers to the questions you have on it should be placed in that context.

In providing the answers to your specific questions, we wish to emphasize that because of the extremely short period of time allowed in responding to the questions, we relied heavily on data provided by the Department of Energy which we did not independently verify. However, in addition, we used (1) data collected in support of our September 1980 report and other work we have done involving the Clinch River Breeder Reactor, (2) information obtained in interviews with industry officials, and

B-199272

(3) information obtained from publications of various trade associations and interest groups.

A list of your questions and our responses is included as Enclosure I to this letter. Further, for your convenience, we have also included a copy of our September 1980 report as Enclosure II and copies of two 1979 reports we prepared on various issues surrounding the Clinch River Breeder Reactor Project as Enclosures III and IV.

If you have any questions or if we can be of any further assistance, please let us know.



J. Dexter Peach
Director

Enclosures - 4

ENCLOSURE I

ENCLOSURE I

ANSWERS TO QUESTIONS ON GAO REPORT ENTITLED"U.S. FAST BREEDER REACTOR PROGRAM NEEDS DIRECTION,"EMD-80-81, SEPTEMBER 22, 1980

Following is a listing of the specific questions you wanted answered on various aspects of our report on the Department of Energy's (DOE) breeder reactor program.

QUESTION 1:

What is GAO's best available estimate of the cost of construction of the Clinch River LMFBR (liquid metal fast breeder reactor) after adjusting for inflation and cost overruns?

ANSWER 1:

According to information we obtained from DOE the total estimated cost for the Clinch River plant is now about \$3196.5 million. The following table provides a cost breakdown based on a schedule leading to plant criticality in February 1990, for all engineering, construction and support activities and 5 years of demonstration operation.

Millions of Expenditure Year Dollars

	<u>Total Costs</u>	<u>Private Sector Contributions</u>	<u>Budget Outlays</u>	<u>Budget Authority</u>
THRU:				
FY 1980	\$ 955.3	\$110.7	\$ 844.6	\$ 947.3
FY 1981	194.6	7.9	186.7	172.0
FY 1982				
& later	<u>2046.6</u>	<u>244.1</u>	<u>1802.5</u>	<u>1714.5</u>
TOTAL	<u>\$3196.5</u>	<u>\$362.7</u>	<u>\$2833.8</u>	<u>\$2833.8</u>

The figures in the table include an allowance for contingencies to cover uncertainties in the scope of the project and an assumed 8 percent annual inflation rate.

ENCLOSURE I

ENCLOSURE I

Question 2:

The GAO report indicates that it does not necessarily advocate building the Clinch River demonstration reactor as part of the U.S. breeder program. (See pp. vi and 46.) What alternative strategies are open to the Congress if it wants to maintain a breeder program?

Answer 2:

There are alternative strategies available to the Congress in developing breeder reactor technology. However, the relative desirability of any given option must be weighed against several important factors like the degree to which the Congress is willing to rely on foreign breeder technology, or the degree to which the United States wants to maintain a comprehensive supporting technology effort of its own. In this regard, our report was predicated on the explicit commitment of the former administration to maintain a strong national breeder reactor program. Accordingly, our conclusions and recommendations laid out what we believed to be the most efficient, most productive technology development path available to this Nation given the desire to maintain a strong national breeder program. That path is to construct and operate a breeder reactor facility so that progress can be made toward demonstrating breeder technology. However, in recognizing the political realities and controversy that has surrounded the breeder reactor program in general, and the Clinch River Breeder Reactor in particular, and assuming a desire to maintain a long-term nuclear power option, our recommendation to the Congress emphasized the need to build a breeder plant--be it Clinch River or another, more recently designed facility--in order to resolve the impasse that has delayed the progress of technological development for the past 4 years. On the other hand, we concluded that if such a decision was not forthcoming, consideration should be given to terminating the program.

Nonetheless, other than the "marching in place" approach that has been followed for the past 4 years, there does appear to be other available breeder reactor development strategies. Some possible options are to:

1. Construct and operate the Clinch River plant and then scale-up to one or more larger plants prior to commercialization. The multiple plant construction involved would make this a high cost option.
2. Skip the gradual scale-up from earlier U.S. breeder plants that Clinch River represents and move directly to a larger, closer to commercial size

ENCLOSURE I

ENCLOSURE I

facility(s) prior to commercialization. As some of our past work in this area indicates, this option entails a degree of scale-up risk that could affect the ultimate attractiveness of the plant(s). 1/

3. Abandon the Department of Energy's existing breeder reactor research and development effort and rely on private industry and the utility industry to obtain foreign breeder reactors if and when they are needed commercially.
4. Cut-back on the scope of the Department of Energy's current program which emphasizes domestic construction and operation of breeder reactor plants and attempt to obtain needed plant construction and operating experience via cooperative arrangements among the United States and some foreign partner(s)--e.g., the United Kingdom or Japan--to jointly build and operate breeder reactor plants prior to commercialization

QUESTION 3:

The GAO report refers to the threat of a possible shutoff of Persian Gulf oil as an argument in favor of going forward with Clinch River LMFBR. Assuming Congress decides to fund Clinch River this year, and construction begins and continues on schedule, what effect can the project be expected to have on oil displacement in the following years: 1990, 2000, 2010, and 2020. Please specify the electricity demand assumptions used in your estimates?

ANSWER 3:

Pages 11 and 18 of our report state that a cutoff of Persian Gulf oil could increase the future demand for nuclear power. However, as page 18 of the report states, the loss of Persian Gulf oil supply is only one of three possible events that could increase future nuclear growth rates. The other two are (1) the effects of future constraints on the domestic coal supply and (2) limits to new hydroelectric and geothermal generating sites.

1/U.S. General Accounting Office report, "The Clinch River Breeder Reactor--Should Congress Continue to Fund It?"
 EMD-79-62, May 7, 1979.

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The main thrust of this issue as discussed in our report is highlighting the uncertainty surrounding the future growth of nuclear power. On one hand, DOE and previous administration officials have cited declining nuclear power projections as part of their justification for delaying the development and demonstration of breeder reactor technology. On the other hand, the occurrence of certain unpredictable, but in our opinion, plausible events like the three we identified above could tend to increase the desirability and the need to build more nuclear powerplants.

We recognize that this argument alone does not make a compelling case on the need to develop breeder reactors sooner rather than later. But, in our judgment, our analyses on pages 10 through 22 of the report demonstrated that the former administration's decision to delay breeder reactor development in the United States was not the most prudent course of action.

Now, to answer your question regarding the effect the Clinch River project can be expected to have on oil displacement in the years 1990, 2000, 2010 and 2020. According to DOE figures, if the Clinch River Breeder Reactor's entire output--about 375 Megawatts electric--was used to displace oil, it would replace more than 1 million barrels of oil per year beginning about 1990. Further, as a rule of thumb, each 1000 Megawatt electric breeder reactor would potentially displace 2.8 million barrels of oil per year. Thus, for an assumed breeder penetration scenario of 1375 Megawatts electric--the Clinch River Plant plus one other 1000 megawatt facility--in the year 2000, 5000 Megawatts electric in 2010, and 10,000 Megawatts electric in 2020, the potential oil displacement would be 3.8, 14 and 28 million barrels of oil per year, respectively. To provide some perspective, in calendar year 1980, oil imports averaged between 6 to 7 million barrels per day.

Moreover, the above estimates assume there is oil to displace. According to DOE officials, the high cost of oil and the Powerplant and Industrial Fuel Use Act--which provides incentives to move away from oil use--are expected to continue the downward trend on petroleum use by utilities. In its 1980 Annual Report to Congress, the Energy Information Administration (EIA) predicts that utility consumption of oil by 2000 will be reduced to less than 10 percent of the current level, and that remaining oil will be used primarily in gas-turbine

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peaking units. The EIA predicts that utility consumption of oil will remain at significant levels only if financial constraints prevent utilities from completing new coal- and nuclear-fueled plants, in which case existing oil-fired plants would be required to meet rising power demands rather than be retired as planned.

These estimates are further based on the fact that during the past decades, the percentage of total energy consumption in the United States used as inputs to electricity generation has been increasing, and since World War II has risen from about 15 percent to over 30 percent today. According to DOE, this fraction is expected to continue to rise, achieving a level of 45 to 55 percent in the year 2000.

QUESTION 4:

The GAO report refers to the progress of foreign breeder programs. What has been the French experience with its own breeder program with regard to (1) cost overruns; (2) revised estimates of the capital cost of commercial breeders, expressed as a ratio to the capital cost of light-water reactors; (3) revised estimates of the cost per kilowatt-hour of breeder-produced electricity.

ANSWER 4:

Accurate information on the actual costs of the French breeder reactors is difficult to obtain because the information is closely held by the French government. Accordingly, the only information we were able to collect in response to this question has been obtained from DOE and is somewhat sketchy. According to DOE, available cost estimates can exclude expenditures such as interest on capital and fuel costs, which could be substantial. These limitations should be kept in mind in considering the data provided in the following paragraphs.

The construction cost of the 250 Megawatts electric (MWe) Phenix demonstration fast breeder reactor was about \$150 million (excluding interest) or nearly 50 percent more than earlier estimates that had been made. In 1974, the 1200 MWe Super Phenix-I was projected to cost about \$400 million. However, while the final costs will not be known until construction is completed in 1983, recent estimates are that actual construction costs could be between \$2 billion and \$2.6 billion when the plant begins commercial operation.

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Regarding the ratio of breeder capital costs to light water reactor capital costs, estimates are that the cost of Super-Phenix I may be about twice that of a similar sized light water reactor if research and development costs are included. For follow-on Super Phenix plants DOE estimates that the costs will be 15 to 20 percent greater than an equivalent sized light water reactor.

The 1990 French goal for the cost of electricity, expressed in 1979 dollars, is \$.04/kilowatt hour (KWh) for breeder produced electricity, \$.03/KWh for light water reactors, \$.05/KWh for coal, and \$.055/Kwh for oil. As a point of comparison, the 1980 electricity costs in France were \$.19/Kwh for nuclear generated electricity, \$.029/Kwh for coal, and \$.044/Kwh for oil.

QUESTION 5:

Did the GAO report consider, on a cost-benefit basis, alternative technologies--such as photovoltaics--that could meet future demand for electricity and the need for oil displacement?

ANSWER 5:

No, we did not do any analysis on the relative merits of breeder reactors versus other emerging energy supply technologies such as photovoltaics. The purpose of our report, as stated in the letter transmitting it to the President of the Senate and the Speaker of the House of Representatives, was to " * * * provide congressional decision-makers with a timely evaluation of the [breeder] program in order to make some contribution to an informed and productive dialogue on the best way to proceed with this very expensive energy technology development program." Accordingly, we analyzed what, in our opinion, were the key issues surrounding the management of the breeder reactor program as it existed at the time. Our objective was not to evaluate the need for the program, but how best to manage it within the environment that prevailed at that time.

Moreover, as our September 1980 report and earlier GAO reports have pointed out, if a long-term nuclear power supply

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is desired in this country, breeder reactors are required. ^{1/} Without this technology, the light water reactors now being used will be no more than an interim energy source. Consequently, in order to maintain a program that can keep open the long-term option, we believe it is necessary to demonstrate that the technology is viable and that there is an industrial infrastructure that can support the technology if and when the time comes to deploy breeders on a large scale. To do so, dictates that a breeder reactor facility should be built and operated at this time. Not to maintain the option implies the phasing out of nuclear power as a long-term energy source and, in our opinion, does not seem to be the most prudent course of action at this time.

QUESTION 6:

Breeder reactors will become commercially viable when the uranium used to fuel conventional nuclear reactors becomes scarce and expensive. What effect would the following efficiency improvements in non-breeder reactors have in extending uranium resources

- modifying existing light-water reactors;
- implementing design improvements in newly constructed light water reactors;
- construction of heavy water reactors, such as the CANDU facility in Canada; and,
- construction of advanced converter reactors?

ANSWER 6:

As your question indicates there are two general directions in which non-breeder reactor developments could move to reduce uranium ore requirements for U.S.-generated nuclear power. One is to develop ways of obtaining more energy from the same amount of uranium in existing and future light water (converter)

^{1/}U.S. General Accounting Office report entitled, "The Clinch River Breeder Reactor--Should Congress Continue to Fund It? EMD-79-62, May 7, 1979.

U.S. General Accounting Office report entitled, "Comments on the Administration's White Paper: The Clinch River Breeder Reactor Project--An End to the Impasse." EMD-79-89, July 10, 1979.

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reactors and the other is to develop, license, build and operate new types of advanced converter reactors in the United States, including possibly, the Canadian CANDU advanced converter reactor. A discussion of the impact each of these developments may or may not have on reducing future uranium ore requirements follows.

The main thrust toward LWR fuel efficiency improvements by DOE has been to develop fuels that will increase the fuel efficiency of light water reactors 15 percent by 1988 and another 15 percent by the year 2000. DOE intended that some of these improvements could be applied to operating plants or to plants now being designed or constructed--retrofitable--while other improvements would involve system and component changes and could only be installed in new plants--nonretrofitable.

In preparing our report, we discussed these improvements with officials at DOE's national laboratories and headquarters. We found a general consensus that technical improvements to light water reactor fuel efficiency can be achieved but that widespread implementation of these improvements is not guaranteed. The consensus was that retrofitable improvements could increase uranium utilization efficiency in individual reactors 10 percent by 1990 and by an additional 5 to 10 percent by 2000. Additional improvements are considered more speculative at this time because less work has been done toward their development and they involve changes in reactor plant systems and components. A DOE program official told us, however, that while fuel improvements in 15 percent have been demonstrated and could be technically attainable by 1988, the program is at the mercy of the nuclear utility industry. He said that it is optimistic to assume at this time that the utilities will convert their reactors because initially only a small gain in fuel utilization can be realized, economically there is little incentive, and several technical problems have yet to be resolved. All the officials we spoke with generally agreed that while some of these improvements are known to be technically achievable, they should not be relied upon at this time as a way to extend the uranium resource base.

Moreover, a recent GAO report--issued after our September 1980 report--states that DOE has dropped further consideration of its fuel efficiency goals for the year 2000. 1/ In

1/Letter report to the Chairman, House Subcommittee on Energy Research and Production, Committee on Science and Technology on DOE's light water fuel utilization improvement program; EMD-81-51, dated March 23, 1981.

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our opinion, this action further undermines the achievability of significant uranium ore savings over the coming decades and, thus, contributes to the need for prudent planning in determining the need for and pace of the DOE breeder reactor development effort.

Regarding advanced converter reactors, our report points out that DOE believes advanced converters could reduce lifetime uranium requirements for a reactor by 40 percent and could be introduced in the year 2000. The advanced converters now available are the high temperature gas-cooled reactor and the Canadian heavy water reactor.

However, a proposed fiscal year 1981 budget rescission now before Congress, if adopted, would reduce funding for the high temperature gas-cooled reactor to a nominal level and research and development for the heavy water reactor is not currently being funded in the United States. Moreover, the consensus among those we interviewed is that the long leadtimes needed to develop and demonstrate these systems precludes their being brought into commercial use until after the year 2000. In addition, we found that their ability to significantly extend uranium resources remains to be proven and, consequently, must be viewed as uncertain. The Nonproliferation Alternative Systems Assessment Program report, completed by DOE in December 1979, concluded that as a group, advanced reactors seem to offer only modest benefits in resource use. For these reasons, it seems questionable that natural market forces alone could be expected to commercialize advanced converter reactor systems.

QUESTION 7:

When Public Law 91-273 was enacted in 1970 to provide for the Clinch River LMFBR, projections of electricity demand, uranium supply, new nuclear construction requirements, the capital and operating costs of commercial breeders, and the lead time from construction of the CRBR to the commercial viability of breeder reactors were different than they are at present. The GAO report is unclear as to if, and how these estimates have changed.

Please provide a symmetrical comparison of the following so that Members may compare the most recent projections with those made at the inception of the CRBR project in 1970

--uranium supply (please include the effect on supply projections of enhanced recovery techniques, higher prices, and improvements in the efficiencies of non-breeder reactors);

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- electricity demand;
- the demand for new nuclear-generated capacity;
- the projected capital cost of commercial breeders, expressed as a ratio of breeder to LWR costs;
- the projected operating costs of commercial breeders;
- the projected cost-per-kilowatt of breeder-generated electricity;
- the lead time from construction of the Clinch River LMFBR to the commercial viability of breeder technology.

ANSWER 7:

Because of complex interrelationships among the various factors included in this question, and because of the great many other variables that must be considered in fully responding to this question, we do not think the answers are conducive to presentation in a symmetrical or tabular format, as you requested. Consequently, our response is in a narrative format. Nonetheless, we think it is responsive to your concerns.

Uranium supply

Generally, estimates of the quantity and quality of uranium reserves and potential resources provide the basis for assessing uranium supply for nuclear power needs. But, according to DOE, the amount of nuclear generating capacity that can be supported by domestic uranium resources cannot be determined by simply equating estimates of total uranium supplies to total demand over a given period. For one thing, it ignores the possibility of an export market and the influence of foreign producers of uranium. In fact, as with other mineral commodities, future uranium production will tend to approximate demand. This was true in 1970 and it is true today. Domestic prices will be influenced by production costs, uranium supply, and foreign sale prices. The interplay of supply, demand, and price is strongly affected by the longer term outlook for nuclear power growth, for which the breeder is an essential ingredient. This situation has altered considerably in the past 7 years.

According to DOE, from 1974 to 1976, there were sharp increases in utility uranium purchases along with rapid price increases. These factors encouraged intense uranium exploration, development, and facility expansion through 1979. Annual production of uranium concentrate (U308) rose from 11,500 tons

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of U308 in 1974 to 18,700 tons in 1979, with about 20,000 tons projected for 1980. At the same time, estimates of uranium resources available also rose. For example, the resources in the \$50/lb forward cost category (in 1980 dollars) rose from about 2.5 million tons of U308 in 1974 to about 3.5 million tons in 1980. However, according to DOE, domestic uranium producers currently are curtailing exploration, facility construction, and uranium production because of declining uranium prices, reduced demand, and possible foreign competition. An extended continuation of this trend would seriously restrict domestic uranium production.

As our recent work in this area suggests, if this Nation wishes to maintain a long term future role for nuclear power production, one step that would help reverse this trend and better assure a viable domestic industry would be a renewed commitment to the long-term expansion of nuclear power, the same conditions that argue for the development of the fast breeder.

Obviously, the incremental effects of enhanced recovery techniques, higher prices and improvements in the efficiencies of non-breeder reactors, if they all occur will delay any breeder need date. However, just how much time these factors can buy is, at this point, a very speculative estimate and, we believe, underlines the need for prudent technology development planning for the long term.

Electricity demand

Since the inception of the Clinch River project, the demand for electricity has continued to climb although at a reduced rate. The year Clinch River was initiated, electricity accounted for around one-quarter of total energy used in the United States. At that time, it was forecast that the electrical fraction would grow to one-third in 1980 and one-half in 2000. This prediction has been accurate so far. In 1980, according to DOE, electricity accounted for about 33 percent of total energy and at least some current forecasts predict a 2000 fraction of 45 to 55 percent.

Demand for new nuclear generating capacity

At the time Clinch River project was authorized it was estimated that there would be 1,200 gigawatts of nuclear capacity by the year 2000. It is now estimated that there will be about 200, and possibly less, gigawatts by that time. The primary reasons for the steady decline appear to be (1) the decreasing demand for electricity, (2) the high cost of

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financing, and (3) the uncertain regulatory climate that prevails over the nuclear power industry.

Projected costs

According to DOE, in 1971 it estimated that the fast breeder reactor would have capital costs about 10 percent higher than LWRs. Over the past decade, various sources have estimated the LMFBR/LWR capital cost ratio to be anywhere from 1 to more than 2. Recent estimates by DOE are that the ratio will be about 1.3.

Originally, it was estimated that LMFBRs would have operating and maintenance costs less than 10 percent higher than for LWRs. In recent estimates, breeder operations and maintenance costs were about 17 percent higher.

In early cost/benefit analyses, total power costs for the breeder were estimated to range from about 3.5 to 4.4 mills per kilowatt-hour. In recent studies, the costs of LWR power were estimated to range from about 20 mills per kilowatt-hour at current uranium prices to more than 30 mills per kilowatt-hour at \$200/lb. of U308. According to DOE, nominal breeder power costs are expected to range from about 30 mills per kilowatt-hour at current uranium prices to 25 mills per kilowatt-hour at \$200/lb. of U308.

Commercial viability

When breeders will become competitive with LWRs is subject to uncertainties in a number of key factors that include uranium supply and price, relative capital costs, and the demand for electricity. Actual commercial viability will depend on decisions made in the marketplace by reactor suppliers and utility buyers. The Federal role is to assure technological viability in a time frame such that the marketplace can make commercialization decisions. Current DOE estimates of competitiveness of LMFBRs with LWRs suggest that the technical basis should be established by the turn of the century to enable the industry to accomplish the commercialization process in a timely manner.



Department of Energy
Washington, D.C. 20585

MAY 28 1981

Honorable Larry Winn, Jr.
House of Representatives
Washington, D. C. 20515

Dear Mr. Winn:

This is in response to your letter to Secretary Edwards requesting additional information on the costs of deauthorizing the Clinch River Breeder Reactor Project.

We have listed your questions and provided our answers in the enclosure.

We hope our response will be of assistance to you.

Sincerely,

Mahlon E. Gates
Mahlon E. Gates
Acting Assistant Secretary
for Nuclear Energy

Enclosure

QUESTIONS FOR CRBRP HEARINGS

QUESTION 1a: How many contracts have been executed?

ANSWER: Nine thousand nine hundred and six contracts, subcontracts and purchase orders have been executed.

QUESTION 1b: How many are now active and uncompleted?

ANSWER: There are currently 201 active and uncompleted contracts, subcontracts and purchase orders; of these, 147 are major contracts and subcontracts.

QUESTION 2: What is the total value (estimate cost and fixed fee at completion) of all active and uncompleted contracts?

ANSWER: The estimated cost of undelivered hardware procurements on order is \$433.4 million.

QUESTION 3: Within a 95 percent level of certainty, what is the estimated cost of terminating the project? What is the FY 1982 cost?

ANSWER: The estimated cost to terminate the CRBRP, assuming start of termination October 1, 1981, ranges from \$101.9 million to \$305 million, depending upon the degree to which design activities are to be completed, and whether or not a final engineering report is prepared. This does not include funds for reimbursement of utility industry and reactor manufacturers' contributions, if required. Estimated contributions from the utility industry as of September 30, 1981, are \$113.3 million; from the reactor manufacturers, 3.9 million.

The estimate of FY 1982 outlays ranges from \$66.3 to \$173.1 million, not including funds for the reimbursement of the utility industry and the reactor manufacturers contributions, if required.

It is not possible to apply a level of certainty, such as 95 percent, to the estimated cost of terminating the CRBRP Project. The estimated termination costs do, however, represent DOE's best estimate based on project obligations and an assessment as to the probable costs which would need to be paid to terminate the existing contracts. While there is a high degree of confidence in these estimates, this confidence can not be put in numerical terms.

QUESTION 4a: What is the basis of the estimated termination cost and schedule?

ANSWER: The estimates of termination costs are based upon a considered evaluation of the obligations to contractors under the termination clauses of the contracts.

QUESTION 4b: What experience of similar project complexity, size and involvement provides termination forecast guidance?

ANSWER: There is no similar project that could be used to provide a basis for comparison; the CRBRP termination estimate is based upon a considered evaluation of the obligations to contractors under the termination clauses of the contracts.

QUESTION 5: What amount of salvage is anticipated during termination?
Describe Procedures.

ANSWER: The normal Department procedures would be used to dispose of items remaining after termination. The components that have been completed and stored would be maintained in protected storage and first offered to other DOE programs.

Second, items not taken by other DOE programs could be offered to other Government agencies through the General Services Administration. If the property items were not acquired during GSA's screening process, they would then be identified as surplus. Following this step any remaining property items would become available for public sale.

Other avenues available include disposal through sale on the foreign market and disposal through sale as scrap.

A similar procedure could be planned for items that are in fabrication, but not completed. In some cases, it might be more cost effective to complete some items rather than terminate existing contracts.

It is not practical to place a salvage value upon the usable components as scrap because of the various possibilities available for disposal of the components.

QUESTION 6: When will DOE be able to provide a termination team and plan to the Committee?

ANSWER: If HR 3146, as amended, were enacted, the Department would provide a formal termination plan to the Committee within 30 days of enactment in accordance with the law.

QUESTION 7: What alternatives to salvage of components have been considered? What uses for the existing components are possible?

ANSWER: Alternatives to salvage are those we discussed in answer to an earlier question, namely, use in other DOE activities, use by other federal agencies, and a designation of surplus. Sales to foreign government are also a possibility. The final possibility is, of course, sales for scrap value.

QUESTION 8a: To what extent are all design and construction changes defined as to cost and schedule impact, negotiated, and approved?

ANSWER: Design baselines and cost and schedule baselines are in place and maintained for the remainder of project work. All changes to the baselined design are evaluated for cost and schedule effect before proposed changes are adopted. Changes to hardware in fabrication are subject to the same control. A singular answer to the question "to what extent..." is not possible. On some contracts the contract changes have been fully incorporated into the contract, on other contracts, changes are near agreement or have not yet been bid by the vendors in response to requests.

QUESTION 8b: By what estimated costs do probable orders exceed present commitments?

ANSWER: The total value of open hardware contracts as of May 1, 1981, was \$433.4 million.

A total of \$259.8 million has been obligated to these contracts including costs incurred through May 1, 1981, of \$215.0 million. These amounts do not include hardware completed as of May 1, 1981, which cost \$129.8 million.

The value of hardware contracts to be placed, based on a schedule for initial criticality of February 1990, to complete the CRBRP Project is estimated to be \$315.2 million.

MODIFICATION NO. 1
TO
AT (49-18)-12

MODIFICATION NO. 1
TO
AGREEMENT
AMONG
UNITED STATES OF AMERICA
AS REPRESENTED BY
THE UNITED STATES ATOMIC ENERGY COMMISSION
AND
TENNESSEE VALLEY AUTHORITY
AND
COMMONWEALTH EDISON COMPANY
AND
PROJECT MANAGEMENT CORPORATION

MODIFICATION NO. 1
TO
AT (49-18)-12

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APPENDICES

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MODIFICATION NO. 1

TO

AGREEMENT

AMONG

UNITED STATES OF AMERICA

AS REPRESENTED BY

THE UNITED STATES ATOMIC ENERGY COMMISSION

AND

TENNESSEE VALLEY AUTHORITY

AND

COMMONWEALTH EDISON COMPANY

AND

PROJECT MANAGEMENT CORPORATION

This Modification No. 1 is entered into, by and among the United States of America (hereinafter "Government") as represented by the United States Energy Research and Development Administration (hereinafter "ERDA"); Tennessee Valley Authority (hereinafter "TVA"); Commonwealth Edison Company (hereinafter "CE"); and Project Management Corporation (hereinafter "PMC").

WHEREAS, the Government, as represented by the United States Atomic Energy Commission (hereinafter "AEC"), TVA, CE and PMC heretofore have entered into Contract No. AT(49-18)-12, effective as of January 13, 1972, to design, construct and operate the Nation's first large-scale Liquid Metal Fast Breeder Reactor Demonstration Plant. At the present time, the basic planning, design and organization goals of the initial phase of the Project as contemplated by said Contract, have been achieved, and the parties hereto are ready to move the Project forward to completion.

AND WHEREAS, the parties hereto have recognized the emergence of two factors which were not present at the time the said Contract was executed. First, there has been a substantial increase in the estimated cost of the Project. Second, the concept of a unified management of the Project through Government and utility industry membership on the PMC Board of Directors and staff was not approved by Congress.

AND WHEREAS, in light of these two factors, the parties believe that the arrangements established under this Modification No. 1 by which the Project will be managed are well suited to carrying the Project forward; that such arrangements preserve all of the utilities' rights under Contract No. AT(49-18)-12 to information and to royalty-free use of inventions and data developed during the course of the Project, together with the right to assign qualified personnel to participate in the Project; and that such arrangements preserve the utilities' rights to receive from BRC notice of significant matters affecting the Project.

AND WHEREAS, under a recent Government reorganization, ERDA has succeeded to the nuclear energy development functions formerly vested in AEC.

NOW THEREFORE, IN CONSIDERATION of the foregoing and of the promises hereinafter set forth, the parties hereto agree that Contract No. AT(49-18)-12 shall be modified in its entirety by substituting therefor the Agreement set forth below in Part I of this Modification No. 1. Such Agreement among the parties, as set forth in Part I below, shall become effective on the Effective Date, as defined in Part II of this Modification No. 1.

PART I
AGREEMENT
AMONG
UNITED STATES OF AMERICA
AS REPRESENTED BY
THE UNITED STATES ENERGY RESEARCH
AND DEVELOPMENT ADMINISTRATION
AND
TENNESSEE VALLEY AUTHORITY
AND
COMMONWEALTH EDISON COMPANY
AND
PROJECT MANAGEMENT CORPORATION

This Agreement, by and among the United States of America (hereinafter "Government"), as represented by the United States Energy Research and Development Administration (hereinafter "ERDA"); Tennessee Valley Authority (hereinafter "TVA"); Commonwealth Edison Company (hereinafter "CE"); and Project Management Corporation (hereinafter "PMC") shall be effective on the Effective Date, as defined in Part II of this Modification No. 1.

By Memorandum of Understanding executed the 7th day of August, 1972, as amended, (hereinafter "Memorandum of Understanding") AEC, PMC, CE, TVA and Breeder Reactor Corporation agreed to negotiate with a view to entering into definitive agreements through which they would cooperatively participate in the design, construction, and operation of the Nation's first large-scale Liquid Metal Fast Breeder Reactor Demonstration Plant.

The parties to this contract recognize the following Principal Project Objectives for this Project.

1. To attempt to successfully demonstrate the Liquid Metal Fast Breeder Reactor in 1983.

2. To help (i) confirm and demonstrate the potential value and environmental desirability of the LMFBR concept as a practical and economic future option for generating electric power (consideration to the impact of the Demonstration Plant on the environment will be given throughout the design and planning phase of the Project and will be integrated into design and planning decisions); (ii) confirm the value of this concept for conserving important nonrenewable natural resources; (iii) develop for the benefit of government, industry, and the public, important technological and economic data; (iv) provide a broad base of experience and information important for commercial and industrial application of the LMFBR concept; and (v) verify certain key characteristics and capabilities of breeder power plants for operation on utility systems such as licensability and safety, operability, reliability, availability, maintainability, flexibility, and prospect for economy.

3. To utilize to the maximum extent practicable the technology developed or being developed in ERDA's programs recognizing that this Project is an indispensable part of ERDA's overall long-range LMFBR research and development program and will be essential to the success of the LMFBR Demonstration Plant.

From and after the Effective Date, as hereinafter defined, ERDA will assume responsibility for managing and carrying out the Project in an efficient, effective and timely manner consistent with the Principal Project Objectives. Except as otherwise provided in this contract, ERDA will design and build the LMFBR Demonstration Plant substantially in conformance with the Reference Design, as hereinafter defined.

In carrying out its part in this Project, ERDA will use its best efforts to do everything that is necessary and appropriate, in a manner consistent with its statutory authority, to assure that it meets its objectives, commitments and responsibilities and contractual obligations which include:

(a) With the assistance of the other parties as hereinafter provided, designing, constructing and operating a successful Demonstration Plant and demonstrating satisfactory operation over the period of this contract;

(b) advancing ERDA's research and development program as required to achieve the objectives of this Project;

(c) utilizing to the maximum degree the resources and capability being developed by ERDA in its technology and engineering programs;

(d) contributing directly to development and utilization of the industrial capability to produce these types of advanced reactors; and

(e) otherwise furthering the development and utilization of the fast breeder reactor as an energy conversion option for the future.

The parties to this contract are bringing a broad spectrum of expertise, resources and commitments to the Project. Both CE and TVA have participated in the Project Definition phase of Round IV of ERDA's Power Reactor Demonstration Program and have been leaders in an effort among the private, public, municipal and cooperatively owned utilities of this country to raise approximately \$250,000,000 for the Project. Both TVA and CE are making substantial financial contributions to the Project. In addition TVA is providing the site for the LMFBR Demonstration Plant. Together, CE and TVA will bring to the Project management expertise and utility operating experience and will represent the interests of the many utility contributors in helping to assure that the design and operating features of the Plant take into consideration pertinent technical and economic requirements for operation of a breeder electric generating plant on a utility system. ERDA brings to the Project the expertise of its staff, its laboratories and its contractors in the LMFBR Program and other major developmental programs; its experience in the management of the design, construction and operation of a large number of experimental reactor plants and test facilities; and its background and experience in applying such resources toward the successful commercial introduction and operation of nuclear power plants through cooperative projects and other complex developmental undertakings. Moreover, ERDA will provide a large, direct financial contribution to the Project, as well as major support from its research and development programs. In addition, ERDA agrees to accept the open-end risks connected with the Project beyond the fixed contribution of the utilities and the expressed additional commitments of TVA and CE, and ERDA agrees that if the Project resources

prove to be insufficient it will endeavor to obtain additional legal authority and funds to make additional contributions to the Project, all as specifically provided in this contract.

This contract is entered into pursuant to applicable law, including section 106 of Public Law 91-273, as amended.

IN CONSIDERATION of the foregoing and of the promises hereinafter set forth, the parties hereto agree as follows:

1.0 Definitions

1.1 As used in this contract (including its appendices), the following terms are defined as set forth in this paragraph.

1.1.1 "BOP" means Balance of Plant. The BOP is comprised of (a) the steam turbine and condenser together with related steam, feedwater and auxiliary systems; (b) the electric generator, switchyard and associated electrical equipment up to connection with the electric power transmission lines; (c) the heat rejection facilities; (d) the associated supporting and ancillary equipment, facilities and structures; (e) the general plant support equipment, facilities and structures; and (f) the necessary site preparations, and all other associated supporting equipment and facilities necessary to accept steam and generate and transform electricity into a form suitable for delivery to the existing electrical grid system of TVA.

1.1.2 "BRC" means Breeder Reactor Corporation.

1.1.3 "CE" means Commonwealth Edison Company.

1.1.4 "AEC" or "Commission" means the United States Atomic Energy Commission.

1.1.5 "LMFBR Demonstration Plant," "Demonstration Plant" or "Plant" means the Liquid Metal Fast Breeder Reactor nuclear power electric generating plant and related facilities generally as described in Appendix A.

1.1.6 "Nuclear Steam Supply System" (NSSS) means the nuclear reactor, sodium heat transport system, steam generation system, all auxiliary systems, containment, control systems, and associated supporting and ancillary equip-

ft, facilities and structures as are necessary to provide steam under appropriate conditions for the steam turbine. The NSSS encompasses, in general, the items included in the scope of work set forth in the invitation for proposals for the lead reactor manufacturer dated March 16, 1972, and issued by PMC and the addendum thereto dated August 15, 1972 including NSSS design studies, overall integration of NSSS requirements, interfacing of the nuclear steam generating facilities with the B. Plant and site nuclear safety analyses and nuclear radiation aspects of Plant environmental studies. The equipment systems and other component items within the NSSS are generally summarized in Appendix A.

1.1.7 "PMC" means Project Management Corporation.

1.1.8 "Principal Project Agreements" means this contract and the contracts referred to in paragraph 3.1.

1.1.9 "Project" means the cooperative effort to design, develop, construct, test and operate the LMFBR Demonstration Plant provided for in the Principal Project Agreements.

1.1.10 "Project Activity" or "Project Activities" means the work, services, commitments and other activities undertaken or performed from January 13, 1972 in connection with, in preparation for, or in furtherance of, the Project, or in winding up the Project pursuant to this contract, including the decommissioning and disposal by ERDA of the LMFBR Demonstration Plant.

1.1.11 "PSC" means the Project Steering Committee established and further described in paragraph 2.0.

1.1.12 "TVA" means Tennessee Valley Authority.

1.1.13 "Project funds" means all funds made available to the Project including funds received from BRC and any interest earned thereon, Government funds, and any contributions made to the Project by reactor and equipment manufacturers.

1.1.14 [Reserved]

1.1.15 [Reserved]

1.1.16 "This contract" means all the terms and provisions contained in this Modification No. 1, and all of its appendices and titles to appendices.

1.1.17 "ERDA" means the United States Energy Research and Development Administration.

1.1.18 "Reference Design" means the "Clinch River Breeder Reactor Plant Reference Design" consisting of six volumes dated _____, and composed of the following portions of the Preliminary Safety Analysis Report for the Plant as docketed by the Nuclear Regulatory Commission on June 13, 1975: Sections 1.1 and 1.5 of Chapter 1; Chapters 3 through 12 inclusive; and Appendices B and C, said Reference Design being that on file at the office of the integrated Project management organization.

1.1.19 "Effective Date" means the Effective Date as defined in Part II of this Modification No. 1.

2.0 Principal Undertakings of PMC and Other General Matters

2.1 PMC shall, pursuant to this contract, administer the interests of the utility industry with respect to the Project. This administration shall include the right and duty of PMC to (1) continuously monitor the Project; (2) prepare and disseminate Project information to BRC and the utility industry; (3) arrange for the participation of utility personnel in the Project; (4) invest and disburse funds received from BRC; (5) exercise the rights provided for in this contract that are designed to protect the utility industry's interests in the Project, including PMC's rights (i) of approval over any proposed major changes in Project scope or deviation from the Reference Design; (ii) of access to information and data, either in the possession of ERDA or any of the Project contractors; (iii) counsel with ERDA and the Project contractors concerning Project matters; (iv) to see that the conditions to the disbursement of funds received from BRC have been fulfilled; and (v) to implement the provisions of paragraph 11 regarding termination of the Project if, in PMC's judgment, a termination criterion exists.

2.2 There is hereby established a Project Steering Committee (PSC) composed of three members as follows: one PMC director acceptable to TVA, one PMC director acceptable to CE, and one member representing and designated by ERDA. Alternates shall be designated. PSC shall function as a tripartite review mechanism for the Project, with the authority and responsibility to keep the PMC Board fully

and currently informed of all significant Project decisions and activities, and to identify Key Positions within the integrated Project management organization to be filled by PMC personnel and utility industry personnel. All major Project matters shall come before PSC for discussion and review.

2.3 With respect to the implementation of the provisions of paragraph 2.2:

2.3.1 ERDA and the PMC Board shall take such action as may from time to time be reasonably required for PSC to effectively and efficiently exercise the functions and responsibilities outlined in paragraph 2.2.

2.3.2 Subject to the terms of this contract PSC shall establish procedures which will ensure that its business is conducted in an orderly manner, and that all significant Project matters are reviewed by PSC. Each PSC member shall have the right to have brought before PSC for its review any Project matters the member considers to be significant, including any general policy pertaining to the Project established by ERDA.

2.3.3 PSC shall meet/as often as required to effectively carry out its responsibilities. For a PSC meeting to take place all three members, or their alternates, shall be present. Any member of PSC shall have the right to have any matter which he believes to be of significance to the Project referred to the PMC Board for its prompt consideration.

2.3.4 [Reserved]

2.3.5 After the PMC Board has announced its position on any matter relating to the Project, including any matter referred to it by PSC, the ERDA member of PSC or any member of the Board may, by giving notice within 48 hours, reserve the right to refer the matter to the heads of ERDA, CE and TVA within a reasonable time (by "heads" is meant the Administrator in the case of ERDA, Chairman or President in the case of CE, and Chairman or designated Director in the case of TVA) for their unanimous resolution of the matter. The heads shall attempt to resolve the matter within 30 days of the time of referral to them. Upon unanimous resolution of the matter by the heads within the 30-day period, the parties shall be advised of the decision of the heads which decision shall be binding upon the parties.

and shall be implemented by appropriate action. In the event the heads are unable to reach a unanimous resolution of the matter within the 30-day period, the Administrator of ERDA shall decide the matter consistent with the Principal Project Objectives and the contractual rights and obligations of the parties under this contract and the other Principal Project Agreements. The Administrator's decision shall control and ERDA shall have the right to implement such decision by appropriate action. No such decision shall affect the right of any party to proceed under paragraph 11.0.

No action or inaction on the part of any party hereto necessitated by or resulting from a referral under this paragraph 2.3.5 shall be regarded as a breach of this contract or any other Principal Project Agreement. While a matter in question is being considered according to the referral mechanisms provided in this paragraph 2.3.5, ERDA may proceed with the Project.

2.3.6 [Reserved]

2.4 PMC shall:

2.4.1 Direct all of its time and effort toward advancing the objectives of the Project and discharging its responsibilities under this contract;

2.4.2 [Reserved]

2.4.3 [Reserved]

2.4.4 Assist in applications for, as appropriate, the permits, licenses, or other authorizations necessary for the Project;

2.4.5 Utilize Project funds solely for Project costs and expenditures in an efficient, reasonable and prudent businesslike manner and in accordance with the provisions of this paragraph 2.4.5.

2.4.5.1 Annually prepare a budget and work plans for the next fiscal year. PMC's annual budget and work plans shall describe PMC's planned Project Activities, receipts, disbursements and reserve transactions for the year. PMC's annual budget will include as projected receipts all funds to be received by PMC from any source; and as projected disbursements all amounts to be disbursed by PMC for Project Activities and any additions to reserves.

In its budget, PMC shall include as disbursements only those items which are allowable costs pursuant to Appendix E. ERDA and PMC may agree to amendment of PMC's budget and work plans at any time. Also, ERDA may request PMC to amend its budget and work plans at any time to provide for advances by ERDA or for PMC disbursements to be reimbursed to a greater extent than budgeted.

For informational purposes, PMC shall annually submit to PSC a preliminary budget promptly following ERDA's submission to PMC of ERDA's preliminary Project budget pursuant to paragraph 4.1.13. ERDA and PMC shall agree upon PMC's annual budget and work plans. Any disagreement with respect to the same shall be resolved in accordance with the provisions of paragraph 2.3.5. Following such agreement or resolution PMC shall also submit its Project budget and work plans to PSC.

2.4.5.2 In carrying out its responsibilities pursuant to this contract, PMC shall receive and disburse Project funds in accordance with budgets and work plans developed pursuant to paragraph 2.4.5.1.

2.4.5.3 If in any fiscal year PMC's budgeted disbursements are greater than budgeted funds available and anticipated to be made available to PMC, ERDA shall reimburse or advance PMC on a timely basis amounts sufficient to cover such excess upon an appropriate showing by PMC of its need therefor. With respect to those PMC disbursements for which ERDA shall reimburse PMC, PMC shall make such disbursements from its reserve for operating costs, to the extent that such funds are available, before requesting disbursement.

2.4.5.4 Nothing in this paragraph 2.4.5 shall restrict PMC's right to independently invest funds received from BRC consistent with its obligations to meet its current commitments.

2.4.6 Review annually a Project budget and work plans which shall be submitted by ERDA pursuant to paragraph 4.1, against which PMC shall, at ERDA's request, agree to reimburse ERDA in accordance with paragraph 2.4.7 from funds available to PMC, an aggregate annual amount, not to exceed the lesser of (a) total funds available to PMC (less the amount of any reserves established pursuant to paragraph 2.5) or (b) fifty percent (50%) of the projected annual Project budget submitted by ERDA.

2.4.7 Disburse funds to ERDA upon receipt from ERDA of an appropriate showing of work accomplished or costs incurred in accordance with the annual work plans submitted in accordance with paragraph 2.4.6.

2.4.8 Review and approve any proposed major changes in Project scope or proposed major deviations from the Reference Design (referred to collectively herein as "major changes"). Any disagreement between PMC and ERDA regarding a proposed major change shall be a matter which shall be resolved in accordance with the provisions of paragraph 2.3.5; provided, however, that no decision of the Administrator of ERDA thereunder with respect to a proposed major deviation from the Reference Design shall affect the right of PMC to make the determination provided for in paragraph 11.4.7, or the right of any party to proceed under paragraph 11.0 on the basis of such a determination.

2.5 PMC shall have the right to establish the following reserves out of funds received from BRC including funds released from the Trust Account pursuant to the provisions of paragraph 9.4, which reserves will not be available for commitment under paragraph 2.4.6 except as provided in paragraph 2.4.5.3 with respect to the reserve for Operating costs.

2.5.1 At the beginning of each fiscal year PMC may establish a reasonable operating reserve from which it shall pay its operating costs for the next fiscal year.

2.5.2 In the event that claims or liabilities are asserted against or incurred by PMC, or in the event PMC reasonably believes that any such claim or liability may be asserted or incurred, PMC may establish a reserve in an amount reasonably necessary to satisfy such claims or liabilities, and expenses in connection therewith.

2.5.3 As the Project nears completion, or in the event of termination of the Project prior to completion, PMC may establish a reserve in an amount reasonably necessary to cover its wind-up costs. Any disagreement with respect to the amount of any reserve provided for in paragraphs 2.5.1 through 2.5.3 above shall be resolved in accordance with the provisions of paragraph 2.3.5.

2.6 PMC, ERDA, TVA and CE will submit to each other such information respecting their activities in connection with the Project, including its demonstration-operation phase, as any of them may reasonably request.

2.7 The undertakings and obligations of the parties under this contract shall be deemed to be satisfied by the exercise of good faith, best efforts to perform and satisfy such undertakings and obligations in an efficient and productive manner.

2.8 [Reserved]

2.9 PMC shall require all of its high-level personnel who perform work under this contract on a full-time basis or for more than 50% of their regular time to disclose to PMC all consultant or other services which the employees propose to undertake for others.

2.10 Subcontracts, Purchase Orders, Other Lower-Tier Commitments

2.10.1 All procurement methods, practices and procedure utilized by PMC shall be approved by the PMC Board.

2.10.2 All contracts, sub-contracts and other procurement actions, and commitments made by PMC in an amount exceeding \$1,000,000 shall be approved by the PMC Board.

2.10.3 No subcontract, purchase order, or other commitment made in the name of PMC shall bind or purport to bind, TVA, CE, PSC, ERDA, BRC or the Government.

2.10.4 [Reserved]

2.11 No decision to purchase general liability insurance, no decision relative to the use of the Trust Account established pursuant to paragraph 9.4, no determination made by PMC pursuant to paragraph 11.4.7, and no matter pertaining to the Indemnifications described in paragraphs 9.2 or 9.3 shall be subject to the referral mechanisms of paragraph 2.3.5.

3.0 Other Principal Project Agreements

3.1 Pursuant to paragraph D-13.0, TVA and ERDA will enter into an agreement for the operation of the Demonstration Plant ("Operating Agreement"), which Operating Agreement will be effective when concurred in by PMC. PMC

and AE: have entered into definitive agreements with BRC (PMC-BRC contract and AEC-BRC contract). ERDA hereby represents to the parties that it has succeeded to the rights and responsibilities of AEC under the AEC-BRC contract. Collectively, this contract, the Operating Agreement, the PMC-BRC and ERDA-BRC contracts shall constitute the "Principal Project Agreements." PMC shall exert its best efforts to fulfill its obligations provided for in the PMC-BRC contract, and to help assure that the BRC fulfills its obligations under its contracts. The PMC-BRC and ERDA-BRC contracts have been reviewed and concurred in by ERDA, TVA and CE; all from the standpoint of their effectuation of and consistency with the provisions of this contract. In any event, said contracts shall be construed so as to be consistent with the provisions of this contract.

3.2 Executed copies of the contracts referred to in paragraph 3.1. and any amendments thereto, and contracts with reactor manufacturer(s) (RM)s, architect engineer(s) (AE)s, and other major Project contractors and sub-contractors will be delivered to and kept on file with ERDA and PMC. The PMC-BRC contract shall not be amended or modified without the written approval of ERDA. To the extent of PMC's rights as described in the Operating Agreement, such Agreement will not be amended or modified without the written consent of PMC.

3.3 Each of the parties will use its best efforts to fulfill its respective obligations under this contract and the contracts described in paragraphs 3.1 and 3.2. CE and TVA further represent and agree that they will not, either individually or in concert, cause the dissolution of PMC during the term of this contract or through willful misconduct or bad faith cause PMC to breach this contract.

3.4 [Reserved]

4.0 Principal Undertakings of the Other Parties

4.1 Principal Undertakings of ERDA

ERDA shall, pursuant to this contract, manage and carry out the Project in an efficient, effective and timely manner consistent with the Principal Project Objectives, and shall use its best efforts to design and build the Demonstration Plant substantially in conformance with the Reference Design.

In order to manage the Project and to utilize the unique skills available within the utility industry, ERDA shall establish, in accordance with paragraph 4.1.12, a single integrated Project management organization comprised of PMC, industry and government personnel, under ERDA's direction. This organization, among other things, will prepare periodic reports on Project Activities and otherwise assist in the dissemination of Project generated information and data to the utility industry. In cooperation with PMC, ERDA will actively seek qualified personnel from the utility industry to work on the Project.

In addition, ERDA shall prepare and submit to PMC, in accordance with paragraph 2.4.6, annual Project budgets and work plans in a form and with sufficient detail to permit PMC to discharge its responsibilities. ERDA shall also provide PMC with funds to cover disbursements made or to be made pursuant to paragraph 2.4.5.3.

For the purpose of assuring that PMC can adequately monitor the Project pursuant to paragraph 2.1, ERDA hereby specifically undertakes to keep PMC fully and currently informed about the Project and to insure that PMC is at all times fully advised of any information which could have a significant impact on the costs of the Project or the attainment of the Principal Project Objectives.

4.1.1 In addition to providing funding from its annual appropriations ERDA, through utilization of the facilities and funds available to it, will perform or cause to be performed Project Activities described as follows:

(1) Research and development including testing, development and applications of codes and standards, quality control programs, components and instrumentation, testing and operational expenses required for commercial operation, and the conduct of such activities in ERDA's facilities when appropriate;

(2) Engineering, procurement, installation and prooftesting of components, equipment (including maintenance equipment) and special instrumentation; and construction of buildings and related facilities;

(3) Design and related work (Titles I, II and III as defined in ERDA Manual Appendix 6101) and other engineering services including but not limited to vendor engineering, expediting, quality assurance, and system checkout and testing;

- (4) Fuel fabrication;
- (5) Training;
- (6) Startup and related work, including research and development necessary to place the Plant in condition ready for full-scale operation, operation and maintenance and periodic tests and inspection during the period of the definitive arrangement; and
- (7) Furnishing special nuclear materials or an entire core(s) for stated periods under an arrangement whereby ERDA assumes part or all of the costs.

4.1.2 ERDA shall provide all source and special nuclear material required for the LMFBR Demonstration Plant during the term of the Project in the form of completed fuel assemblies designed to specifications and in accordance with the overall Project schedule. Title to said material and material bred and produced therefrom will remain or be in ERDA. ERDA will arrange for the preparation, fabrication and delivery of completed fuel assemblies containing said source and special nuclear material to the LMFBR Demonstration Plant. With respect to spent nuclear fuel, during the term of the Project ERDA shall arrange for its removal from the LMFBR Demonstration Plant storage facility, its transport, reprocessing (if any) and its ultimate disposal. The costs of transportation and fabrication of the core or cores will be paid by ERDA. If ERDA decides that the core(s) will be provided in a manner different than that provided for above, ERDA is authorized, and will, when appropriate, waive all use charges for nuclear material up to Ten Million dollars (\$10,000,000).

4.1.3 [Reserved]

4.1.4 ERDA hereby assumes a continuing obligation to seek and to endeavor to maintain such legislative authorization (not necessarily limited to presently authorized authority or forms of assistance) and appropriations as may be required to enable the continued effective conduct of Project Activities, including funds to cover costs of or associated with turbine-generators and auxiliary equipment, the switchyard, and associated facilities.

4.1.5 ERDA hereby represents that it has obtained and will endeavor to maintain the additional legislative authorization described in paragraph 9.0.

4.1.6 [Reserved]

4.1.7 ERDA shall assume responsibility for supervision and administration of contracts with RM(s) and AE(s) and, except as otherwise agreed with PMC, other contractors and suppliers performing work on the Project, and shall use its best efforts to assure that the Plant is designed, built and tested substantially in conformance with the Reference Design and that it meets the Principal Project Objectives.

4.1.8 PMC shall have the right to (1) inspect work being performed by ERDA, and (2) consult directly with the RM(s), AE(s), and other major Project contractors and subcontractors. It is the intention of PMC and ERDA to develop administrative understandings and procedures to assure that Project business can be conducted efficiently. Recognizing the need for keeping each participant informed of work progress, early notice of potential cost overruns or schedule delays, ERDA shall provide such information as each participant shall reasonably request. ERDA shall notify PMC of significant decisions respecting the Project Activities. ERDA will also afford PMC the opportunity to review and provide input into Project Activities, particularly on matters pertaining to those Principal Project Objectives relating to suitability of the plant for operation on a utility system.

4.1.9 In addition to ERDA's commitments pursuant to paragraph 4.1.12 with respect to the integrated Project management organization, upon request of PMC, ERDA will make arrangements for reasonable numbers of PMC staff and utility industry employees acceptable to ERDA, for purposes of education and training, to participate with ERDA and its contractors in carrying out ERDA's commitments related to this Project.

4.1.10 ERDA shall own the Demonstration Plant, subject to TVA's rights to possession and possible future ownership pursuant to the terms of this contract.

4.1.11 In addition to its other obligations to provide PMC information regarding Project Activities, ERDA hereby specifically agrees to promptly and fully inform PMC, through PSC, of any and all proposed major changes in Project scope or major deviations from the Reference Design (referred to herein as "major changes"). A major change shall mean, inter alia, any change which reasonably might be expected to: (1) Increase or decrease then current estimated Project

costs by \$25,000,000 or more; or (2) increase or decrease then current estimated Project schedules by 1 year or more; or (3) otherwise significantly affect the probability of achieving any of the Principal Project Objectives (including, inter alia, verification of certain key characteristics and capabilities of breeder power plants for operation on utility systems).

4.1.12 ERDA shall manage and carry out the Project through an integrated Project management organization which ERDA shall organize and may revise from time to time. The integrated Project management organization shall be comprised of personnel from ERDA, PMC and the utility industry.

Upon nomination by PMC from time to time, PMC personnel and utility industry personnel shall serve, without regard to their affiliation, in Key Positions in the integrated Project management organization, which Key Positions shall be identified from time to time by PSC. ERDA shall have the right to approve or reject PMC personnel and utility industry personnel nominated by PMC for assignment to Key Positions, which right shall be exercised only after consultation with PMC, and in a reasonable manner consistent with the best interests of the Project.

If ERDA determines at any time that, in the best interests of the Project, the structure of the integrated Project management organization should be revised, and if such revision (i) affects the functions, responsibilities or reporting and supervisory duties of a Key Position or (ii) results in the creation of new positions, then PSC shall reidentify Key Positions in such revised integrated Project management organization.

In addition to individuals serving in Key Positions, PMC personnel and utility industry personnel shall serve, without regard to their affiliation, in staff positions in the integrated Project management organization. ERDA will make a reasonable number of staff positions available to be filled by PMC personnel and utility industry personnel. PMC will nominate individuals to fill such positions. PMC shall be responsible for paying, or arranging for payment of, salaries and related costs of all PMC personnel and utility industry personnel assigned to the integrated Project management organization.

ERDA shall have the right to terminate an individual's assignment to the integrated Project management organization for cause at any time, which right shall be exercised only

after consultation with PMC, and in a reasonable manner consistent with the best interests of the Project. In the event of EPWA's and PMC's disagreement with respect to the termination of an individual's assignment, the matter shall be referred to PSC for review. If PSC cannot resolve the matter, it shall be resolved in accordance with the provisions of paragraph 2.3.5.

4.1.13 In addition to the submissions called for by paragraph 4.1, ERDA shall provide PMC a reasonable opportunity to review preliminary annual Project budgets and work plans prior to ERDA's submission of its annual legislative appropriation requests to the Office of Management and Budget.

4.1.14 ERDA hereby specifically agrees to provide PMC, upon request, with any and all information it may reasonably request with respect to the amount of Government funds currently available to ERDA for the Project, the amount of Project funds needed by ERDA for the near-term conduct of the Project, and any current ERDA efforts or plans to seek additional legislative authority or Government funds for the Project.

4.1.15 PMC, CE and TVA shall have a right of access to any and all information with respect to the RM, AE and other major Project contractors, including a right to consult directly with them.

4.1.16 ERDA shall:

4.1.16.1 Direct all necessary and appropriate time and effort toward advancing the objectives of the Project and discharging its responsibilities for Project Activities;

4.1.16.2 Administer all Project contracts assigned to ERDA by PMC or otherwise entered into by ERDA;

4.1.16.3 Apply or assist in applications for, as appropriate, the permits, licenses or other authorizations necessary for the Project;

4.1.16.4 Utilize funds received from PMC and any other Project receipts, solely for Project costs and expenditures in an efficient, reasonable and prudent businesslike manner and in accordance with applicable provisions of this contract;

4.1.16.5 Manage the Project to assure that the Plant will be designed, constructed and operated in accordance

with all applicable nuclear licensing requirements of the Nuclear Regulatory Commission ("NRC") and in accordance with applicable standards compiled by ERDA's Division of Reactor Research and Development (RDT Standards) and other applicable nationally recognized codes and standards such as those issued by ANSI, ASME, and IEEE. ERDA will develop and implement a quality assurance plan including procedures. For the purposes of this Project, ERDA shall have authority to modify the application of RDT and other standards. ERDA is authorized to accept workmanship, material, equipment, and facilities and operating and maintenance procedures where there are deviations from standards upon determination that such acceptance is technically correct and consistent with the objectives of the Project; and

4.1.17 No contract, subcontract, purchase order, or other commitment made in the name of ERDA shall bind or purport to bind, TVA, CE, PSC, PMC or BRC.

4.2 Additional Principal Undertakings of TVA

TVA will transfer to ERDA custody of the tract described in Appendix A for use as the plant site pursuant to paragraphs 10.3 and D-3.0. The additional undertakings of TVA and additional terms and conditions pertaining thereto are set forth in Appendix D. Recognizing the close relationship of the parties, TVA will keep the other parties informed through procedures similar to those in 4.1.8.

4.3 Additional Principal Undertakings of CE

The additional principal undertakings of CE and additional terms and conditions pertaining thereto are set forth in Appendix F.

4.4 Additional Assistance

In addition to the assistance for which specific provision is made herein, TVA, CE, PNC and ERDA will each make a reasonable effort to provide such additional assistance as any one of them may request from time to time and which in its good faith judgment it agrees it can provide consistent with the effective discharge and conduct of its general commitments, duties, and obligations.

5.0 Start of Construction

5.1 The term "construction," for purposes of this paragraph 5.0, means any Project Activities which may

not be performed without a duly issued Nuclear Regulatory Commission construction permit.

5.2 Construction of the LMFBR Demonstration Plant shall not begin unless the following conditions are satisfied:

5.2.1 ERDA, PMC, CE and TVA shall have agreed in writing that the available and expected resources are sufficient to enable the successful completion of the Project, recognizing the legislative process ERDA must follow to obtain authorizations for funds and appropriations.

5.2.2 ERDA has secured the necessary legal authority to make, and has made, the commitments provided for in paragraphs 9.0 and 10.0;

5.2.3 TVA, CE, ERDA and PMC shall have agreed in writing that the Plant can be built and operated consistent with the provisions and policies of applicable laws in respect to the protection of the environment; and

5.2.4 In accordance with the provisions of paragraph D-3.1, TVA has been advised in writing by ERDA as to that portion of the tract needed for construction of the Demonstration Plant and appurtenant facilities.

6.0 Term

6.1 The term of this contract and the demonstration period shall end upon the expiration of five years after the date of initiation of operation of the LMFBR Demonstration Plant. The initiation of operation shall be deemed to begin with the day next following ERDA's written notice to the parties of the successful conclusion of a program of operational testing satisfactory to ERDA and TVA.

7.0 Project Resources and Costs

7.1 It is recognized that the financial assistance or monetary obligations of CE and TVA are, respectively, limited to the contributions specified in this contract and that the cooperative arrangement for the LMFBR Demonstration Plant will depend upon the following resources:

7.1.1 The resources and funds provided by ERDA pursuant to paragraphs 4.1.1 and 4.1.4;

7.1.2 The funds provided by BRC, estimated to be approximately \$250 million, contributed by electric utilities

and electric systems pursuant to the agreement with BRC referred to in paragraph 3.1 and any interest earned thereon;

7.1.3 [Reserved]

7.1.4 [Reserved]

7.1.5 The CE contribution described in paragraph F-6.2;

7.1.6 The TVA contribution described in paragraph D-2.4;

7.1.7 The availability of CE's senior management on a nonreimbursable basis to assist in program guidance;

7.1.8 The availability of TVA's senior management on a nonreimbursable basis to assist in program guidance;

7.1.9 The availability of the site and transmission facilities, as provided in paragraph D-3.0;

7.1.10 Contributions by reactor and equipment manufacturer(s) and others; and

7.1.11 Any additional resources, including special nuclear material provided pursuant to paragraph 4.1.2 and resources from the sale of energy and property, refunds, rebates, credits, donations, interest, and the indemnity protection provided pursuant to paragraph 9.0.

7.2 PMC and ERDA shall utilize available Project resources in a prudent and effective manner to minimize costs consistent with the achievement of the Principal Project Objectives, and to help avoid the need for ERDA to endeavor to obtain and contribute additional resources pursuant to paragraph 4.1.4. PMC shall not make commitments or expend funds beyond the limits of Project funds available to PMC.

7.3 The Allowable Cost Principles in Appendix E shall be applicable to PMC's utilization of any Project funds. Costs and expenses actually incurred beginning on January 13, 1972, may be satisfied or reimbursed out of Project funds to the extent they are determined to be allowable under Appendix E. Such costs shall include portions of early costs of TVA and CE incurred in connection with the Project beginning January 13, 1972, deemed by AEC to be of benefit to the Project.

7.4 [Reserved]

7.5 [Reserved]

7.6 Upon request ERDA, PMC, CE and TVA shall submit to each other from time to time statements reflecting Project costs incurred, funds received, funds deposited and disbursed. Supporting documents and justification shall also be made available upon request.

7.7 Any discounts, refunds, rebates, salvage, allowances or other credits, including interest thereon, accruing to ERDA, PMC, CE or TVA, shall be credited to the pertinent cost.

7.8 Prior to financial settlement upon expiration of the contract period, or termination of the Project, PMC, CE and TVA shall satisfy ERDA's patent clearance requirements.

8.0 Accounts, Records, Reports and Inspections

8.1 ERDA, PMC, CE and TVA shall maintain complete financial records which shall clearly account for all Project funds and property coming into their custody or possession in connection with the Project. The system of accounts employed by PMC, CE and TVA shall be satisfactory to ERDA, CE and TVA, and generally accepted accounting principles shall be consistently applied.

8.2 All books of account and records pertaining to Project Activities shall be subject to inspection and audit by ERDA at reasonable times, and PMC, CE and TVA shall afford ERDA proper facilities for such inspection and audit.

8.3 With respect to any subcontract of PMC, CE or TVA which has not been assigned to ERDA (including lump-sum or unit-price subcontracts or purchase orders) where, under the terms of the subcontract, costs are a factor in determining the amount payable to a subcontractor of any tier, PMC, CE or TVA as the case may be, will conduct or have conducted an audit of the costs of the subcontractor at such time and in such manner as may be satisfactory to PMC, CE or TVA as the case may be, and ERDA except when ERDA elects to waive such audit or approves other arrangements for the conduct of the audit.

8.4 Except as agreed upon by ERDA, all financial records, reports and supporting data pertaining to Project Activities under this contract shall be available

for inspection by ERDA upon reasonable request, and copies shall be delivered to ERDA as ERDA may from time to time request. Except as otherwise provided in this contract, all such records in the possession of PMC, CE or TVA shall be preserved by PMC, CE or TVA as the case may be for three years after final payment made under this contract and thereafter disposed of in such manner as may be agreed upon by ERDA and PMC, CE, or TVA as the case may be.

8.5 PMC, CE, TVA and ERDA shall furnish progress reports, schedules, financial and cost reports, and such other reports pertaining to Project Activities as the others may from time to time reasonably request.

8.6 PMC, CE and TVA will include (or cause to be included) provisions similar to those contained in paragraphs 8.1 through 8.6 in all subcontracts of any tier where, under the terms of the subcontract, costs are a factor in determining the amount payable to the subcontractor.

8.7 The results of any audits ERDA conducts under the terms of this contract shall be made available to PMC, CE and TVA. If PMC, CE and TVA have audits performed of their financial accounts, and such audits include a review of records pertaining to Project Activities, the results of such audits shall be made available to ERDA.

9.0 Indemnity

9.1 ERDA hereby represents that it has obtained such legislative action as may be required to authorize ERDA to execute and deliver to PMC, CE and TVA lawful and binding written undertakings of indemnification in the form hereinafter set forth, and ERDA shall promptly execute and deliver said undertakings of indemnification, together with the opinion of the General Counsel of ERDA, to the effect that each such indemnification undertaking is duly authorized, validly executed and delivered and enforceable in accordance with its terms and ERDA will use its best efforts to obtain an opinion to the same effect from the Attorney General or the Comptroller General of the United States.

9.2 The undertakings of indemnification to be executed and delivered by ERDA pursuant to paragraph 9.1 shall state as follows: (the names of CE and TVA to be substituted for PMC in their respective indemnification agreements).

INDEMNIFICATION

"Subject to the availability of appropriations, ERDA agrees to indemnify and hold harmless PMC and its officers and directors (such indemnification to survive the cessation or termination of any such individual's employment or service in such capacity) and each and all of them (hereinafter called 'Indemnitees') against any and all claims and liabilities and expenses incurred in connection therewith, arising out of Project Activities, joint or several, incurred by, asserted against or to which the Indemnitees or any of them may become subject (including expenses of litigation and reasonable attorneys' fees) to the extent any such claims and liabilities and expenses incurred in connection therewith are not satisfied out of Project funds or compensated by insurance; provided, however, that such indemnification and hold harmless obligations of ERDA shall not extend to (i) public liability claims and expenses incurred in connection therewith covered by Sec. 170 of the Atomic Energy Act of 1954, as amended; (ii) claims and liabilities and expenses incurred in connection therewith in derivative shareholder actions brought by CE shareholders 1/ or claims and liabilities and expenses incurred in connection therewith relating to utility rates asserted in ratepayers' suits brought by and in the right of ratepayers 2/, provided no such ratepayers' suit brought against one corporate Indemnitee shall affect the rights to indemnification of any other corporate Indemnitee; (iii) any liability or claim against and expenses incurred in connection therewith of an officer or director of PMC caused by the bad faith or willful misconduct of such officer or director; (iv) any liability or claim against and expenses incurred in connection therewith of PMC caused by PMC's material breach, due to willful misconduct or bad faith of an officer or director of PMC or General Manager of PMC or PMC's Comptroller 3/ of its obligation to use its best efforts to carry out its undertakings under any Principal Project Agreement to which PMC is a party, including its obligation not to expend funds or intentionally incur contractual commitments beyond the limitations contained in such Principal Project Agreements (recognizing, however, the exception specified in the concluding sentence of D 2.7); provided that no action or conduct

1. Applies only to CE Indemnification Agreement.
2. Applies only to CE and TVA Indemnification Agreement.
3. The positions of General Manager and Comptroller apply only to PMC.

described in this clause (iv) on the part of [PMC, or the named officials of PMC, TVA or CE shall affect the rights to indemnification of either of CE or TVA] 4/; (v) costs incurred by CE or TVA prior to the date of execution of the contract among AEC, TVA, CE and PMC effective January 13, 1972, which costs were properly includable in the offset by CE and TVA in reduction of CE's and TVA's contributions to the Project pursuant to paragraphs D-2.4 and F-6.2 of said contract 5/; or (vi) any liability or claim against PMC and expenses incurred by PMC in connection therewith which is an allowable cost specified in paragraph E-13.3 of the contract among AEC, TVA, CE and PMC, effective January 13, 1972. 6/ For the purposes of this indemnification, (a) an individual who is an officer or director of CE or TVA and whose duties include the full-time or temporary performance of services or taking of actions for or on behalf of PMC shall not, with respect to such services or actions, be considered an officer or director of CE or TVA for purposes of voiding CE's or TVA's indemnity, and (b) except for purposes of (iv) above an individual serving as a member of AEC who is not a director of PMC shall, with respect to his actions for PSC, be considered a director of PMC. Each indemnitee shall, promptly upon receipt of notice of the assertion of any claim or of the commencement of any action against him or it in respect to which indemnity may be sought from ERDA on account of this agreement, give written notice to ERDA of the assertion or commencement thereof, together with a copy of any papers served, but the inadvertent omission so to notify ERDA of the assertion of any such claim or commencement of any such action shall not release ERDA from any liability which it may have under this Agreement. In case any such action shall be brought against any indemnitee, ERDA shall be entitled to participate in and (to the extent that it shall wish, including the selection of counsel) to direct the defense thereof at its own expense; any Indemnitee shall have the right to employ its or his own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of such Indemnitee unless the employment of such counsel has been authorized by ERDA in connection with the defense of such action or ERDA shall not have assumed the defense of such action. ERDA shall not be liable for any settlement effected without its consent. Without intending to limit the specific exclusions from this indemnity set forth in clauses (i) through (vi) in the first

- . Appropriate substitution of parties will be made in the Indemnification Agreements of CE and TVA.
- . Applies only to CE and TVA Indemnification Agreement.
- . Applies only to PMC Indemnification Agreement.

sentence hereof, the indemnity agreements contained herein shall remain in full force and effect regardless of (a) termination of the Project or of any Principal Project Agreement, (b) completion of the Project, (c) the existence of any other indemnity agreements in favor of an Indemnitee, (d) any amendments, modifications or changes in the Principal Project Agreements, and (e) except as otherwise provided herein, any action or omission by any Indemnitee, it being the intention of the parties hereto that the Indemnitees, subject to the availability of appropriations, be absolutely and unconditionally indemnified, except as specifically provided herein. ERDA shall endeavor to obtain additional funds from the Congress in the event available funds are insufficient to satisfy claims, liabilities and expenses hereunder. The terms 'Principal Project Agreement,' 'Project,' 'Project Activities,' and 'Project funds' as used herein shall have the same meaning as set forth in the contract among AEC, TVA, CE and PMC, effective January 13, 1972."

9.3 PMC shall enter into, concurrently with the execution of this contract, indemnity agreements with CE and TVA and their officers and directors and PMC's officers and directors in conformity with paragraph 9.2, except that, where appropriate, "PMC" will be substituted for "ERDA," and "ERDA" or "TVA" will be substituted for "PMC" and the restriction relating to the availability of appropriations shall not apply to funds from sources other than the ERDA. In addition, PMC, when authorized by the ERDA, the Board and PSC, may extend indemnity agreements to others in circumstances it deems appropriate. The monetary amounts payable pursuant to the indemnity agreements described in this paragraph 9.3 shall be recognized as Project costs; provided, however, that until ERDA provides the indemnities described in paragraphs 9.1 and 9.2, PMC's liability under such indemnity agreements shall not be satisfied out of funds provided by the ERDA. After ERDA provides such indemnity to PMC pursuant to paragraphs 9.1 and 9.2, any liability incurred by PMC by virtue of its having theretofore extended indemnity agreements to CE and TVA and their officers or directors, and PMC's officers and directors, or to others, will be encompassed within and may be satisfied under ERDA's indemnity of PMC pursuant to paragraphs 9.1 and 9.2 without regard to any bad faith or willful misconduct on the part of PMC, except that extension of such indemnity by ERDA shall not be deemed to waive any defenses that may already have accrued to PMC prior to ERDA's extension thereof.

9.4 PMC's rights and security interest in the Contribution Agreements between CE and PMC and TVA and BRC, respectively, and PMC's rights to receive from BRC any monies paid or payable to BRC thereunder (approximately \$33 million), shall be and are hereby assigned and pledged to TVA and CE to secure the payment of ERDA's and PMC's obligations under the indemnity agreement with TVA and CE provided for by paragraph 9.3 and ERDA's obligations under the indemnity agreements with TVA, CE, and PMC provided for by paragraph 9.2. Amounts received or receivable from funds paid pursuant to said Contribution Agreements shall be deposited in a Trust Account with a trustee designated by TVA and CE and pursuant to an agreement or agreements satisfactory to TVA and CE, and any such funds shall be invested as provided in such agreement or agreements. The principal of funds deposited in said Trust Account (but not the earnings) shall be exclusively available for the payment of ERDA's and PMC's obligations under such indemnity agreements unless TVA and CE shall otherwise consent in writing to release such funds for other Project purposes; provided, however, that such consent shall not be withheld if, and to the extent, that in TVA's and CE's reasonable judgment (a) adequate provision has been made for the satisfaction of all known obligations of ERDA and PMC under such indemnities and (b) reasonable provisions have been made for any obligations under said indemnities that might arise taking into account the stage of the Project at which such consent is requested. PMC and BRC shall from time to time take all actions and execute and deliver such documents as (i) may be necessary to perfect the above pledge and security interest and otherwise effectuate the foregoing and (ii) as TVA and CE may reasonably deem necessary to protect the interests of the Indemnitees under said indemnity agreements (including authorizing BRC to make payment of amounts received or receivable under the above-mentioned Contribution Agreements to the trustee and/or assigning and delivering the Contribution Agreements in question to the trustee).

Any funds authorized to be released as provided above shall revert to PMC and shall be treated as Project funds, the source of which is utility contributions. Any Trust Account Funds not yet released to PMC at the time of PMC's final settlement with ERDA shall, to the extent such funds are not used to satisfy indemnity obligations, ultimately be paid to ERDA together with pertinent interest earned thereon.

All interest earned on funds in said Trust Account shall be transferred to PNC's general account on a current basis and shall be available for use in the same manner as other Project funds.

9.5 The indemnification agreements which ERDA will enter into with TVA and CE pursuant to paragraph 9.2 will be in addition to the indemnities authorized by paragraph 9.3, and Indemnitees pursuant to such indemnity agreements may proceed under either indemnity provision; provided, however, that such Indemnitees shall first proceed under the indemnity extended pursuant to 9.3 until or unless the monies available thereunder are exhausted, except that the Trust Account established pursuant to paragraph 9.4 shall not be deemed "monies available" under the indemnity extended under paragraph 9.3. In no event shall such Indemnities fully recover under more than one indemnity provision.

10.0 Ownership and/or Disposition of LNFBR Demonstration

Plant Upon Expiration or Termination

10.1 [Reserved]

10.2 [Reserved]

10.2.1 When the term of this contract ends, or upon earlier termination provided for in this contract, if TVA decides not to purchase the LNFBR Demonstration Plant from ERDA as provided for in this contract, ERDA will retain ownership of the facility and paragraph 10.2.3 shall apply.

10.2.2 ERDA shall have the right to use and dispose of said facility as it deems advisable from the standpoint of its programs, provided that ERDA's use of the Plant shall not affect TVA's use of the remaining portions of the tract described in Appendix A in any more adverse manner than said portions would have been affected by operation of the Plant during the demonstration period. Among other things, ERDA may request that at ERDA's expense TVA operate the facility; upon such request, TVA agrees that it will negotiate in good faith toward reaching an accord with ERDA on suitable terms and conditions. TVA further agrees that in the event of such operation of the facility it will purchase the energy produced thereby on the same basis specified for such purchase during the period of this

contract, unless TVA and ERDA agree upon another basis at that time. If the facility is not completed or operated on the site, as provided for above, or upon conclusion or completion of operation on the site, ERDA shall, except as ERDA and TVA otherwise agree to, effect such decommissioning, removal, dismantling, and other disposal measures, at its own expense, as ERDA considers safe, environmentally suitable, advisable, and reasonable, and which will not affect TVA's use of the remaining portions of the tract described in Appendix A in any more adverse manner than said portions would have been affected by operation of the Plant during the demonstration period.

10.2.3 PMC shall, for a reasonable period of time at ERDA's request and expense, assist ERDA and TVA in connection with the activities referred to in 10.2.2 above.

10.3 It is agreed that ERDA shall own the Plant and TVA shall provide ERDA with an appropriate document transferring custody of the site to ERDA.

10.4 It is further agreed that during the demonstration period TVA will afford PMC and the utility industry the same right to information, data, consultation, notice and participation by qualified personnel as those provided by ERDA under the applicable terms of this contract.

11.0 Termination

11.1 Notwithstanding the provisions of paragraph 2.3.5 termination of the Project shall be effected exclusively in accordance with the provisions of this paragraph 11.0 and PMC has inserted provisions in the PMC-BRC contract which will effectuate the provisions of this paragraph 11.0, and it is agreed that although BRC is not a party to this contract, BRC shall have the rights and obligations conferred or imposed upon it under this paragraph 11.0.

11.2 The Project will terminate at the end of the term of this contract (as specified in paragraph 6.1) and it may be terminated at any time (and the affairs of the Project wound up) by common agreement in writing among PMC, BRC, TVA, CE and ERDA.

11.3 If at any time any one of BRC, PMC, CE, TVA, or ERDA believes that one or more of the Project termination criteria set forth in paragraph 11.4 have been met, and if in the opinion of such party the Project should be terminated on that account, it shall give written notice to

the other parties listed above and all parties shall confer and review the situation. If, after conferring and reviewing the situation with the other parties (or after making a good faith effort to do so) such party still desires to terminate the Project for that reason, it shall, not more than 45 days after giving the initial written notice referred to above, give a second written notice to all of the parties listed above, and, unless, within 15 days after the giving of such second notice, one or more of the other parties gives written notice to all other parties that in its good faith judgment, the facts fail to establish that one or more Project termination criteria have been met, the Project shall forthwith terminate, subject to the allowance of a reasonable time for the winding up of Project Activities. If any party gives such notice that in its good faith judgment the facts fail to establish that a Project termination criterion has been met, the matter again shall be referred to all parties for consultation. If within 30 days after receipt of such notice, any three or more of the parties give notice in writing that in their good faith judgment a Project termination criterion has been met, the Project shall, subject to winding up Project Activities, terminate on the tenth day following such notice unless on or before the tenth day after such notice any one of the parties who gave notice of its disagreement that a Project termination criterion had been met, elects, by written demand served upon the other parties, to postpone actual termination of the Project for a reasonable period of time (not to exceed six months), provided that such party shall furnish with such demand a certificate signed by the head of such party (as defined in paragraph 2.3.5 with respect to ERDA, TVA and CE and similar officials of PMC and BRC) to the effect that such party in good faith believes that within said period it can correct the conditions due to which each relevant Project termination criterion has been judged to have been met. If such party successfully corrects such conditions within said period the Project shall continue. No party shall be deemed to have waived its right to utilize the foregoing termination procedures by reason of its acquiescence in the existence or continuation of facts or conditions constituting a Project termination criterion.

11.4 Each of the following shall constitute Project termination criterion:

11.4.1 [Reserved]

11.4.1.1 Any necessary governmental permit, license, authorization or approval required for the construction or

operation of the Plant shall not have been secured within six months following the scheduled time for such action on ERDA's approved Project schedules, and the Project is seriously delayed or hindered thereby.

11.4.1.2 There continues to exist for six months a revocation, suspension or loss of the right to proceed under any necessary permit, license, authorization, or approval, and the Project is seriously delayed or hindered thereby.

11.4.2 The conditions precedent to the start of construction set forth in paragraph 5.2 have not been met within six months from the date ERDA certified it is otherwise ready to start construction and (but for the failure of said conditions to have been satisfied) had all necessary legal or Governmental authority to do so.

11.4.3 Despite the best efforts of ERDA and TVA, they have failed to obtain or maintain indemnification coverage under or substantially comparable in scope and in respect of persons indemnified to that required by the provisions of Section 170 of the Atomic Energy Act of 1954, as amended, when said coverage is reasonably required for the Project, including the protection afforded by the limitation of liability contained in Section 170(e) of the Atomic Energy Act.

11.4.4 Upon consideration of all available resources, including ERDA's efforts to obtain additional funds pursuant to paragraph 4.1.4, it appears at any time that there are or will soon be insufficient Project resources (including funds to cover the cost of the turbine-generator, auxiliary equipment, switchyard and associated facilities) to permit the effective conduct of the Project, including full satisfaction of anticipated commitments and contingencies.

11.4.5 There is in existence a final court injunction or administrative order with respect to which all times for appeal have run which prevents the Project from proceeding to conclusion in a manner permitting attainment of the Principal Project Objectives.

11.4.6 For technical or environmental reasons the Principal Project Objectives cannot be realized.

11.4.7 There is in existence a written determination by PMC, delivered to all parties, that it does not agree with a decision of the Administrator of ERDA, made pursuant to the provisions of paragraph 2.3.5, to proceed with a major change from the Reference Design.

11.5 The following provisions shall govern the financial obligations of PMC and ERDA to each other following termination of the Project.

11.5.1 Upon termination, PMC shall pay to ERDA an amount equal to (a) the total of (i) all funds under PMC's possession, control or direction at the date of termination, and (ii) all funds released to PMC by C. and TVA pursuant to the provisions of paragraph 9.4 subsequent to the date of termination, less an amount equal to (b) PMC's unpaid allowable costs of (i) operating PMC through the date of termination (ii) satisfying any claims or liabilities asserted against PMC, and (iii) winding up PMC's affairs following the date of termination. PMC shall also assign to ERDA all of PMC's rights, if any, to collect and receive any amounts due and unpaid as of the date of termination under any Utility Contribution Agreement; it being understood, however, that no contributing utility shall have any obligation to make any payment under a Utility Contribution Agreement which payment becomes due at any time following the date of termination. In the event that PMC's allowable costs exceed the total of all funds referred to in (a) above, ERDA shall pay such excess allowable costs on behalf of PMC.

11.5.2 PMC's payments under this paragraph 11.5 shall be made in two installments, both of which shall be determined by PMC and be subject to prior verification by ERDA. The first installment shall be paid no later than 45 days following the date of termination. The second installment shall be paid upon receipt by PMC of an audit from PMC's independent Certified Public Accountants (which shall promptly follow the wind-up of PMC's affairs, and the final disposition of, or provision for, any outstanding claims against or liabilities of PMC).

11.5.3 Each installment referred to in paragraph 11.5.2 above shall be in an amount equal to the total of all funds described in 11.5.1(a) above which are held by PMC as of the date of such installment, less those reserves, if any, established by PMC pursuant to paragraph 2.5 covering those matters described in 11.5.1(b) above. Any amounts held in reserve by PMC pursuant to paragraph 2.5 above which exceed PMC's actual obligations shall be paid promptly to ERDA.

11.5.4 Except as provided for in this paragraph 11.5, PMC shall have no obligations of any kind to ERDA respecting the costs of winding up the Project (should ERDA decide to do so) or the decommissioning, dismantling or removal of the Demonstration Plant.

11.6 [Reserved]

11.7 [Reserved]

12.0 Subcontractor Disputes

12.1 PMC shall incorporate the following clause, with respect to disputes between PMC and any of its contractors (other than CE, TVA and BRC):

"Except as otherwise provided in this contract, any disputes concerning a question of fact arising under this contract which are not disposed of by agreement shall be decided by the PMC Board of Directors or its designee which shall reduce its decision to writing and mail or otherwise furnish a copy thereof to the contractor. The decision of the PMC Board or its designee shall be final and conclusive unless within 30 days from date of receipt of such copy the contractor mails or otherwise furnishes to the PMC Board or its designee a written appeal addressed to the ERDA Board of Contract Appeals. The decision of the Board of Contract Appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the parties shall be afforded an opportunity to be heard and to offer evidence in support of their positions. Pending final decision of a dispute hereunder, the contractor shall proceed diligently with the performance of the contract and in accordance with the decision of the PMC Board or its designee. This disputes clause does not preclude consideration of questions of law in connection with decisions provided for above: Provided, that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law."

13.0 Notice

13.1 Whenever a notice is given under this contract it shall be in writing, and a copy shall be sent to each party.

14.0 Contract Appendices

The attached appendices constitute integral parts of this contract:

- Appendix A - Description of LMFBR Demonstration Plant Facility and Site
- Appendix B - [Reserved]
- Appendix C - Provisions Applicable to Activities Involving the Use of ERDA Funds and to Other Project Activities to the Extent Applicable Law
- Appendix D - Additional Principal Obligations of TVA and Additional Terms and Conditions Pertaining Thereto
- Appendix E - Provisions Generally Applicable to the Contract
- Appendix F - Additional Principal Undertakings of Commonwealth Edison Company and Additional Terms and Conditions Pertaining Thereto

PART II

EFFECTIVE DATE

Part I of this Modification No. 1 shall become effective upon a date ("Effective Date") to be agreed upon in writing by the parties hereto, which date shall follow (by no more than 45 days) and shall be dependent upon the fulfillment of each one of the conditions precedent set forth in paragraph 1.0 below.

1.0 Conditions Precedent Each of the following conditions shall be fulfilled before Part I of this Modification No. 1 shall become effective.

1.1 Opinion of General Counsel of ERDA Each party shall have received a written opinion of the General Counsel of ERDA to the effect that:

(a) ERDA has the necessary legal authority to execute this Modification No. 1, and to carry out its functions, duties and responsibilities pursuant to the Agreement set out in Part I hereof;

(b) Congress has authorized the appropriation of \$ _____ for funding ERDA's Project responsibilities for the period of July 1, 1975 through September 30, 1976.

1.2 Opinion of Counsel for BRC Each party shall have received a written opinion of counsel for BRC that:

(a) The Agreement set out in Part I hereof will not adversely affect the tax exempt status of BRC; and

(b) The Agreement set out in Part I hereof will not adversely affect the deductibility for Federal income tax purposes of contributions made by electric utilities to BRC pursuant to their utility contribution agreements.

1.3 Opinion of Counsel for PMC Each party shall have received a written opinion of counsel for PMC that:

(a) There has been received a current determination letter from the Internal Revenue Service, in a form satisfactory to Counsel for PMC, stating that the Agreement set out in Part I hereof will not adversely affect the tax exempt status of PMC; and

(b) The contracts between PMC and Westinghouse Electric Corporation (Contract 49-18-12-3), and PMC and Burns & Roe, Inc. (Contract 49-18-12-4) have effectively been assigned, transferred or otherwise conveyed to ERDA in a manner which insures that neither PMC, CE, or TVA shall, from and after the Effective Date, incur any liability, obligation, responsibility or duty of any kind thereunder.

2.0 Transfer of Government Funds and Property

2.1 Unexpended funds heretofore advanced to PMC by AEC's Letter of Credit No. 89-00-0732 dated July 27, 1973 shall be withdrawn by ERDA on the Effective Date or at a mutually agreeable date thereafter which assures payment of PMC invoices in process.

2.2 Unless otherwise agreed to by ERDA, title to all property acquired by PMC with Project funds shall be transferred to ERDA within 30 days after the Effective Date. PMC shall provide to ERDA a listing of all property, custody of which is to be transferred to ERDA, showing the PMC Property Record Number and cost thereof. ERDA may verify the property listing by physical inspection and audit. Upon agreement between ERDA and PMC the listing of property will be appropriately signed by representatives of ERDA and PMC, and custody of the property shall be transferred by PMC to ERDA.

IN WITNESS WHEREOF the parties have executed this Modification No. 1, this _____ day of _____, 1975.

PROJECT MANAGEMENT CORPORATION

U.S. ENERGY RESEARCH AND
DEVELOPMENT ADMINISTRATION

By _____

By _____

Title _____

Title _____

COMMONWEALTH EDISON COMPANY

TENNESSEE VALLEY AUTHORITY

By _____

By _____

Title _____

Title _____

I, _____, _____, certify that I am
 _____ of Commonwealth Edison Company identified
 as a party herein; that _____ who
 signed this contract on behalf of the corporation was then
 _____ of said corporation; that said contract was
 duly signed for and on behalf of said corporation by author-
 ity of its governing body and is within the scope of its
 corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my
 hand and the seal of said corporation this _____ day of
 _____, 1975.

 (SEAL)

I, _____, _____, certify that I am
 _____ of Project Management Corporation
 identified as a party herein; that _____
 who signed this contract on behalf of the corporation was
 then _____ of said corporation; that
 said contract was duly signed for and on behalf of said
 corporation by authority of its governing body and is within
 the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my
 hand and the seal of said corporation this _____ day of
 _____, 1975.

 (SEAL)

I, _____, _____, certify that I am
 _____ of the Tennessee Valley Authority, an
 agency and instrumentality of the United States identified
 as a party herein; that _____ who signed
 this contract on behalf of TVA was then _____ of

said Authority; that said contract was duly signed for and on behalf of said Authority by authority of its governing body and is within the scope of its statutory powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said Authority this _____ day of _____, 1975.

(SEAL)

MODIFICATION NO. 1
TO
AT (49-18)-12

APPENDIX A

DESCRIPTION OF LMFBR DEMONSTRATION PLANT FACILITY AND SITE

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MODIFICATION NO. 1
TO
AT (49-18)-12

APPENDIX A

DESCRIPTION OF LMFBR DEMONSTRATION PLANT FACILITY AND SITE

A-1.0 Overall Description of the Plant

A-1.1 The LMFBR Demonstration Plant will be an integrated electric power plant and will include (a) a liquid sodium cooled reactor and steam generation system; (b) a steam turbine driven electric generation system; (c) heat rejection system; (d) electrical switchyard; and (e) related auxiliaries and supporting structures and facilities. The reactor will utilize liquid sodium as the coolant and will produce about 1,000 megawatts of thermal energy in the form of superheated steam at about 900°F. The active region of the core will be made up of fuel assemblies containing mixed plutonium-uranium oxide fuel clad in stainless steel. The fuel region will be surrounded by blanket assemblies similarly clad but containing fertile uranium-238.

A-1.2 The overall steam cycle will be similar to that of modern, conventional, steam-electric power plants. A simplified flow diagram with representative parameters for an LMFBR Demonstration Plant is shown in Figure 1. A simplified sketch of one possible arrangement of one of the primary coolant loops is shown in Figure 2.

A-1.3 The liquid sodium will be heated in the reactor core and will leave the reactor at about 1000°F; the sodium in the primary system will be radioactive due to neutron activation and dissolved radioactive fission and corrosion products. The primary system will be located in an inert atmosphere in shielded vaults within a containment structure. Intermediate heat exchangers will be used to transfer heat to a nonradioactive secondary sodium coolant system for generation of steam at about 900°F to drive the turbine-generator. The exhaust steam from the turbine will be condensed by transferring its heat energy through the walls of condenser tubing to cooling water flowing on the other side. The condensate (water from condensed steam), is pumped through feedwater heaters where it is preheated and then pumped back into the steam generator. The specific method of providing a cooling water supply for the condenser will depend in large measure on the results of specific site environmental studies. The electrical energy generating efficiency of this Plant is expected to be in the range of 35 to 40 percent, which is typical of modern fossil fired plants.

A-1.4 Design guidelines for the Demonstration Plant stress maximum use of existing technology to reduce technical risks and assure safe, reliable operation. The Plant will be designed to operate reliably, safely and with minimum environmental effects in compliance with these guidelines. The design effort will be supported by a strong research and development program with significant emphasis on proof-testing. Major safety features of the Demonstration Plant nuclear steam supply system will include: duplicate and independent shutdown systems; a monitoring system that can sense abnormalities; a low pressure coolant system; and guard vessels surrounding the reactor vessel and other main coolant system components and primary piping so that the reactor core will remain immersed in sodium coolant even if there should be a break in the reactor vessel or main coolant system. Additional major safety features are the capability to remove core decay heat by natural circulation of sodium in the primary and intermediate loops in the event of loss of electrical (pumping) power, and a separate containment structure; a conceptual version of the containmentment is shown in Figure 3.

A-1.5 The major objectives of the demonstration Project are stated in the preamble of this contract. The manner in which the Demonstration Plant is operated, after the initial period of startup and testing, will be as similar as practicable to the commercial LMFBR plants that are expected to be operated in the 1980s. Except for research and development requirements that are a part of the planned program, every effort will be made to sustain a high plant load factor.

A-1.6 Although the specific design for the first Demonstration Plant has not been selected on a firm basis, a list of several key design parameters is shown in Figure 4.

A-2.0 Description of the NSSS

A-2.1 The NSSS includes the following nuclear plant components, systems, equipment and structures.

A-2.1.1 Reactor core which includes the fuel, blanket, control and special assemblies and other in-vessel replaceable items such as core support, restraint, and instrumentation equipment and components.

- A-2.1.2 Reactor vessel and cover.
- A-2.1.3 Control drive mechanisms and operating systems.
- A-2.1.4 Handling devices for reactor cover and in-vessel components.
- A-2.1.5 Sodium heat transport systems including primary and secondary sodium systems; sodium steam generation and protection systems.
- A-2.1.6 Auxiliary systems including safeguards cooling systems, component heating and cooling systems, coolant supply systems, and recovery systems, cover gas supply and purification systems, radioactive waste collection, storage, treating and disposal systems, and sodium fire protection and alarm systems.
- A-2.1.7 Reactor and process control systems.
- A-2.1.8 Plant protection system.
- A-2.1.9 Monitoring instrumentation systems.
- A-2.1.10 Plant data systems.
- A-2.1.11 Temporary and special instrumentation for construction, preoperational startup and power tests.
- A-2.1.12 New and spent fuel transfer, cleaning, examination, maintenance and shipping facilities and equipment.
- A-2.1.13 Component inspection, cleaning, and maintenance and storage equipment.
- A-2.1.14 Sodium storage equipment.
- A-2.1.15 Radiation shielding.
- A-2.1.16 Reactor and Plant containment and supporting systems.
- A-2.1.17 All facilities, structures and appurtenances related to the above systems and equipment and required to provide steam under the appropriate conditions to the BOP.

A-3.0 Site Description and Map

A-3.1 The site for the Plant will be a portion of an approximately 1364 acre tract of land on a peninsula on the Clinch River in Roane County within the city limits of Oak Ridge, Tennessee, as shown in Figure 5. The tract is owned by the United States of America and is in the custody of TVA. The tract is generally bounded by the AEC's Oak Ridge Reservation, and the Clinch River. A portion of the tract is committed to use as an industrial park as indicated in Figure 5.

FIGURE 1
SIMPLIFIED FLOW DIAGRAM

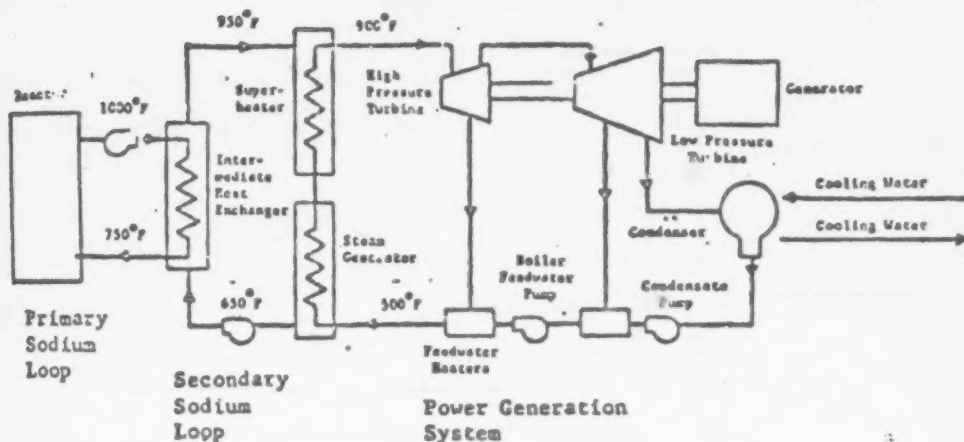
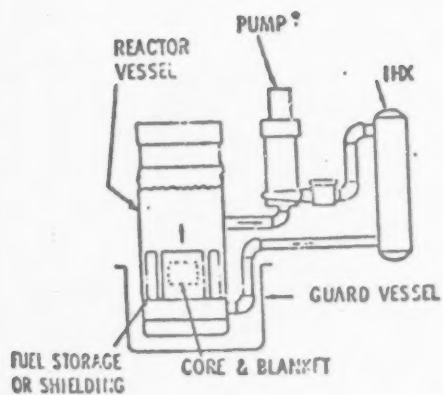
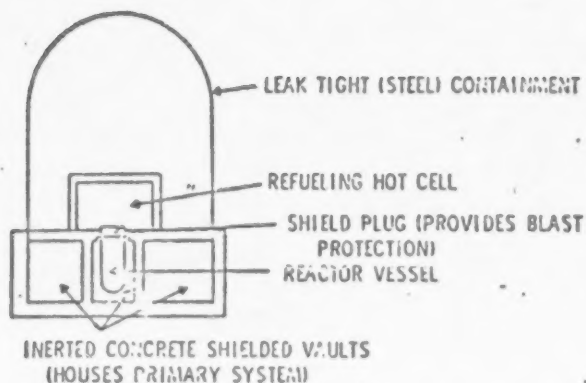


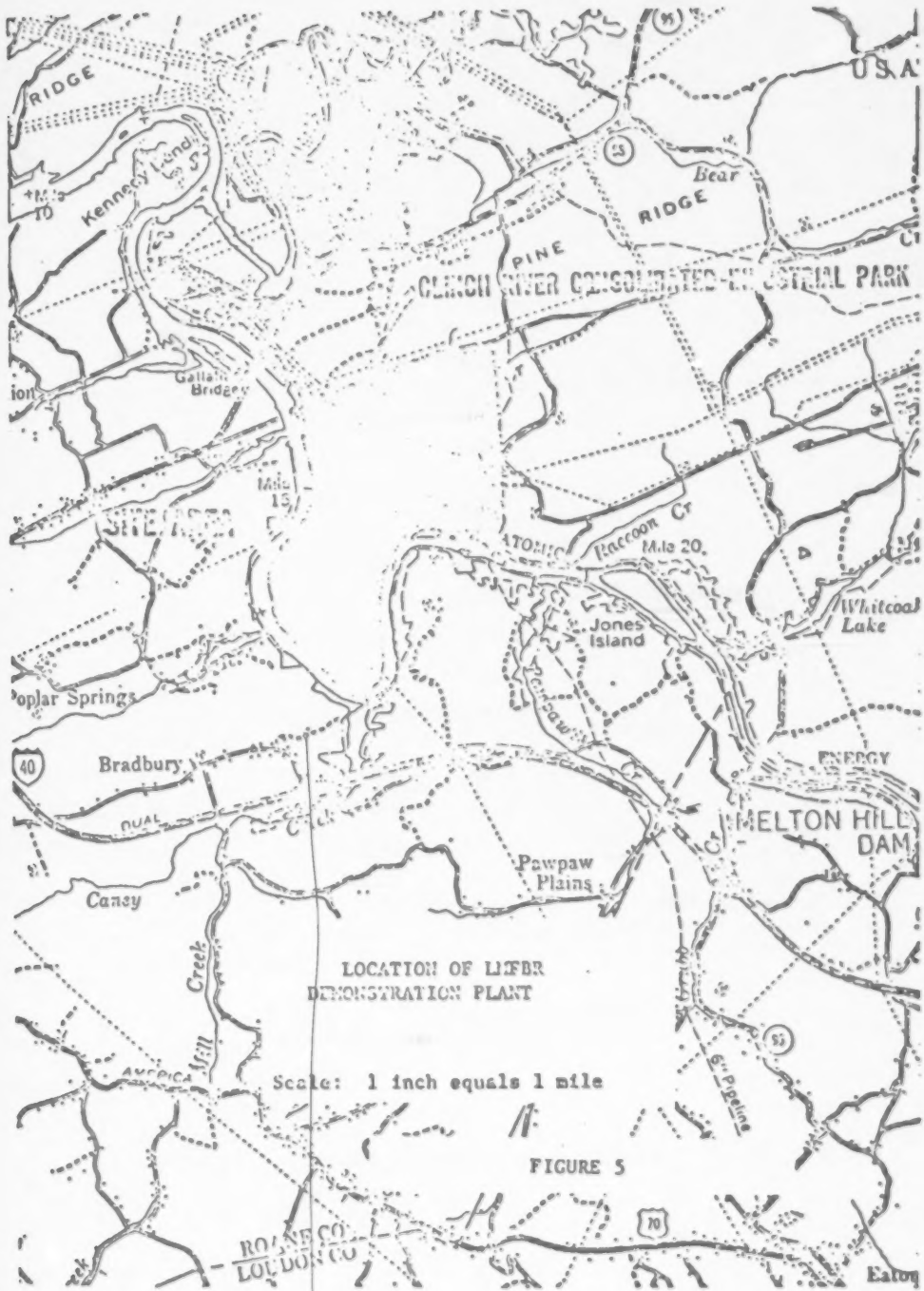
FIGURE 2
REPRESENTATIVE ARRANGEMENT
OF PRIMARY COOLANT SYSTEM



Alternative locations for the primary sodium pump are (1) in the line carrying hot sodium from the reactor (as shown) (2) in the line carrying cold sodium to the reactor (not shown)

FIGURE 3**LMFBR CONTAINMENT CONCEPT****FIGURE 4****LMFBR DEMONSTRATION PLANT****Key Design Parameters**
(Approximations)

Reactor Power (MWt)	1000
Net Electric Power (MWe)	350-400
Primary System Type	Loop
Number of Primary Loops	3
Reactor Outlet Temperature (°F)	1000
Reactor Vessel Boundary Temperature (°F)	900



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APPENDIX C

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APPENDIX C

PROVISIONS APPLICABLE TO ACTIVITIES INVOLVING THE USE OF ERDA FUNDS MADE AVAILABLE TO PMC PURSUANT TO PARAGRAPH 4.1.1 OF THE CONTRACT AND TO OTHER PROJECT ACTIVITIES TO THE EXTENT APPLICABLE BY LAW.

With respect to Project Activities by TVA and CE, provisions in this Appendix C shall be deemed to refer to TVA or CE, as the case may be, in lieu of PMC. To the extent TVA has established policies and procedures pertaining to the clauses contained in this Appendix C, TVA and ERDA shall at the appropriate time determine which shall be followed.

C-1.0 Buy American Act

C-1.1 In acquiring end products, the Buy American Act (41 U.S. Code 10a-d) provides that the Government give preference to domestic source end products. For the purpose of this clause:

(i) "Components" means those articles, materials, and supplies which are directly incorporated in the end products;

(ii) "End products" means those articles, materials, and supplies which are to be acquired under this contract for public use; and

(iii) A "domestic source end product" means (A) an unmanufactured end product which has been mined or produced in the United States and (B) an end product manufactured in the United States if the cost of the components thereof which are mined, produced, or manufactured in the United States exceeds 50% of the cost of all its components. For the purposes of this C-1.1(iii)(B), components of foreign origin of the same type or kind as the products referred to in C-1.1(ii) or (iii) of this clause shall be treated as components mined, produced, or manufactured in the United States.

C-1.2 PMC agrees that there will be delivered under this contract only domestic end products, except end products:

(i) Which are for use outside the United States;

(ii) Which the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality;

(iii) As to which the ERDA determines the domestic preference to be inconsistent with the public interest; or

(iv) As to which the ERDA determines the cost to the Government to be unreasonable. (The foregoing requirements are administered in accordance with Executive Order No. 10582, dated December 17, 1954.)

C-2.0 Utilization of Small Business Concerns

C-2.1 It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with small business concerns.

C-2.2 PMC agrees to accomplish the maximum amount of subcontracting to small business concerns that PMC finds to be consistent with the efficient performance of this contract.

C-3.0 Small Business Subcontracting Program

C-3.1 PMC agrees to establish and conduct a small business subcontracting program which will enable small business concerns to be considered fairly as subcontractors and suppliers under this contract. In this connection, PMC shall:

C-3.1.1 Designate a liaison officer who will (i) maintain liaison with the Government on small business matters, (ii) supervise compliance with the Utilization of Small Business Concerns clause, and (iii) administer PMC's "Small Business Subcontracting Program."

C-3.1.2 Provide adequate and timely consideration of the potentialities of small business concerns in all "make-or-buy" decisions.

C-3.1.3 Assure that small business concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of small business concerns. Where PMC's lists of potential small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

C-3.1.4 Maintain records showing (i) whether each prospective subcontractor is a small business concern, (ii) procedures which have been adopted to comply with the policies set forth in this clause, and (iii) with respect to the letting of any subcontract (including purchase orders) exceeding \$10,000, information substantially as follows:

(A) Whether the award went to large or small business.

(B) Whether less than three or more than two small business firms were solicited.

(C) The reason for nonsolicitation of small business if such was the case.

(D) The reason for small business failure to receive the award if such was the case when small business was solicited.

The records maintained in accordance with (iii) above may be in such form as PMC may determine, and the information shall be summarized quarterly and submitted by the purchasing department of each individual plant or division to PMC's cognizant small business liaison officer. Such quarterly summaries will be considered to be management records only and need not be submitted routinely to the Government; however, records maintained pursuant to this clause will be kept available for review by the Government until the expiration of 1 year after the award of this contract, or for such longer period as may be required by any other clause of this contract or by applicable law or regulation.

C-3.1.5 Notify ERDA before soliciting bids or quotations on any subcontract (including purchase orders) in excess of \$10,000 if (i) no small business concern is to be solicited, and (ii) ERDA's consent to the subcontract (or ratification) is required by this contract. Such notice will state PMC's reasons for nonsolicitation of small business concerns, and will be given as early in the procurement cycle as possible so that ERDA may give SBA timely notice to permit SBA a reasonable period to suggest potentially qualified small business concerns through ERDA. In no case will the procurement action be held up when to do so would, in PMC's judgment, delay performance under the contract.

C-3.1.6 Include the Utilization of Small Business Concerns clause in subcontracts which offer substantial small business subcontracting opportunities.

C-3.1.7 Cooperate with ERDA in any studies and surveys of PMC's subcontracting procedures and practices that ERDA may from time to time conduct.

C-3.1.8 Submit quarterly reports of subcontracting to small business concerns on either Optional Form 61, Small Business Subcontracting Program Quarterly Report of Participating Large Company on Subcontract Commitments to Small Business Concerns, or such other form as may be specified in the contract. Except as otherwise provided in this contract, the reporting requirements of this subparagraph C-3.1.8 do not apply to small business contractors, small business subcontractors, educational and nonprofit institutions, and contractors or subcontractors for standard commercial items.

C-3.2 A "small business concern" is a concern that meets the pertinent criteria established by the Small Business Administration and set forth in Section 1-1.701 of the Federal Procurement Regulations.

C-3.3 PMC agrees that, in the event it fails to comply with its contractual obligations concerning the small business subcontracting program, this contract may be terminated, in whole or in part, for default.

C-3.4 PMC further agrees to insert, in any subcontract hereunder which may exceed \$500,000 and which contains the Utilization of Small Business Concerns clause, provisions which shall conform substantially to the language of this clause, including this paragraph C-3.4, and to notify the ERDA of the names of such subcontractors.

C-4.0 Utilization of Concerns in Labor Surplus Areas

C-4.1 It is the policy of the Government to award contracts to labor surplus area concerns that (1) have been certified by the Secretary of Labor (hereafter referred to as certified-eligible concerns with first or second preferences) regarding the employment of a proportionate number of disadvantaged individuals and have agreed to perform substantially (i) in or near sections of concentrated unemployment or underemployment or in persistent or substantial labor surplus areas or (ii) in other areas of the United States, respectively, or (2) are noncertified concerns which have agreed to perform substantially in persistent or substantial labor surplus areas, where this can be done consistent with the efficient performance of the contract and at prices no higher than are obtainable elsewhere. PMC agrees to use its best efforts to place its subcontracts in accordance with its policy.

C-4.2 In complying with paragraph C-4.1 of this clause and with paragraph C-2.2 of the clause of this contract entitled "Utilization of Small Business Concerns" PMC in placing its subcontracts shall observe the following order of preference: (1) Certified-eligible concerns with a first preference which are also small business concerns; (2) other certified-eligible concerns with a first preference; (3) certified-eligible concerns with a second preference which are also small business concerns; (4) other certified-eligible concerns with a second preference; (5) persistent or substantial labor surplus area concerns which are also small business concerns; (6) other persistent or substantial labor surplus area concerns; and (7) small business concerns which are not labor surplus area concerns.

C-5.0 Labor Surplus Area Subcontracting Program

C-5.1 PMC agrees to establish and conduct a program which will encourage labor surplus area concerns to compete for subcontracts within their capabilities. In this connection, PMC shall:

C-5.1.1 Designate a liaison officer who will (i) maintain liaison with duly authorized representatives of the Government on labor surplus area matters, (ii) supervise compliance with the Utilization of Concerns in Labor Surplus Areas clause, and (iii) administer PMC's "Labor Surplus Area Subcontracting Program";

C-5.1.2 Provide adequate and timely consideration of the potentialities of labor surplus area concerns in all "make-or-buy" decisions;

C-5.1.3 Assure that labor surplus area concerns will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of labor surplus area concerns;

C-5.1.4 Maintain records showing procedures which have been adopted to comply with the policies set forth in this clause. Records maintained pursuant to this clause will be kept available for review by the Government until the expiration of 1 year after the award of this contract, or for such longer period as may be required by any other clause of this contract or by applicable law or regulations; and

C-5.1.5 Include the Utilization of Concerns in Labor Surplus Areas clause in subcontracts which offer substantial labor surplus area subcontracting opportunities.

C-5.2 A "labor surplus area concern" is a concern that (1) has been certified by the Secretary of Labor (hereafter referred to as a certified-eligible concern) regarding the employment of a proportionate number of disadvantaged individuals and has agreed to perform substantially in or near sections of concentrated unemployment or underemployment, in persistent or substantial labor surplus areas, or in other areas of the United States or (2) is a noncertified concern which has agreed to perform a substantial proportion of a contract in persistent or substantial labor surplus areas. A certified-eligible concern shall be deemed to have performed

a substantial proportion of a contract in or near sections of concentrated unemployment or underemployment in persistent or substantial labor surplus areas, or in other areas if the costs that the concern will incur on account of manufacturing or production in or near such sections or in such areas (by itself, if a certified concern, or by certified concerns acting as first-tier subcontractors) amount to more than 25 percent of the contract price. A concern shall be deemed to have performed a substantial proportion of a contract in persistent or substantial labor surplus areas (by itself or its first-tier subcontractors) if the costs that the concern will incur on account of production or manufacturing in such areas amount to more than 50 percent of the contract price.

C-5.3 PMC further agrees to insert, in any subcontract hereunder which may exceed \$500,000 and which contains the Utilization of Concerns in Labor Surplus Areas clause, provisions which shall conform substantially to the language of this clause, including this paragraph C-5.3, and to notify the ERDA of the names of such subcontractors.

C-6.0 Utilization of Minority Business Enterprises

C-6.1 It is the policy of the Government that minority business enterprises shall have the maximum practicable opportunity to participate in the performance of Government contracts.

C-6.2 PMC agrees to use its best efforts to carry out this policy in the award of its subcontracts to the fullest extent consistent with the efficient performance of this contract. As used in this contract, the term "minority business enterprise" means a business, at least 50 percent of which is owned by minority group members or, in case of publicly owned businesses, at least 51 percent of the stock of which is owned by minority group members. For the purposes of this definition, minority group members are Negroes, Spanish-speaking American persons, American-Orientals, American-Indians, American-Eskimos, and American Aleuts. Contractors may rely on written representations by subcontractors regarding their status as minority business enterprises in lieu of an independent investigation.

C-7.0 Minority Business Enterprises Subcontracting Program

C-7.1 PMC agrees to establish and conduct a program which will enable minority business enterprises (as defined in the clause entitled "Utilization of Minority Business Enterprises") to be considered fairly as subcon-

tractors and suppliers under this contract. In this connection, PMC shall:

C-7.1.1 Designate a liaison officer who will administer PMC's minority business enterprises program.

C-7.1.2 Provide adequate and timely consideration of the potentialities of known minority business enterprises in all "make-or-buy" decisions.

C-7.1.3 Assure that known minority business enterprises will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of minority business enterprises.

C-7.1.4 Maintain records showing (i) procedures which have been adopted to comply with the policies set forth in this clause, including the establishment of a source list of minority business enterprises, (ii) awards to minority business enterprises on the source list, and (iii) specific efforts to identify and award contracts to minority business enterprises.

C-7.1.5 Include the Utilization of Minority Business Enterprises clause in subcontracts which offer substantial minority business enterprises subcontracting opportunities.

C-7.1.6 Cooperate with the ERDA in any studies and surveys of the Contractor's minority business enterprises procedures and practices that ERDA may from time to time conduct.

C-7.1.7 Submit periodic reports of subcontracting to known minority business enterprises with respect to the records referred to in subparagraph C-7.1.4, above, in such form and manner and at such time (not more often than quarterly) as ERDA may prescribe.

C-7.2 PMC further agrees to insert, in any subcontract hereunder which may exceed \$500,000, provisions which shall conform substantially to the language of this clause, including this paragraph C-7.2, and to notify the ERDA of the names of such subcontractors.

C-8.0 Contract Work Hours Standards Act--Overtime Compensation

C-8.1 This contract, to the extent that it is of a character specified in the Contract Work Hours Standards

Act (40 U.S.C. 327-330), is subject to the following provisions and to all other applicable provisions and exceptions of such Act and the regulations of the Secretary of Labor thereunder.

C-8.2 Overtime Requirements

C-8.2.1 No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any workweek in which he is employed on such work to work in excess of eight hours in any calendar day or in excess of forty hours in such work-week on work subject to the provisions of the Contract Work Hours Standards Act unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all such hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

C-8.3 Violation; Liability for Unpaid Wages; Liquidated Damages

C-8.3.1 In the event of any violation of the provisions of paragraph C-8.2, PMC and any subcontractor responsible therefor shall be liable to any affected employee for his unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph C-8.2 in the sum of \$10 for each calendar day on which such employee was required or permitted to be employed on such work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by paragraph C-8.2.

C-8.4 Withholding for Unpaid Wages and Liquidated Damages

C-8.4.1 ERDA may withhold from the PMC from any moneys payable on account of work performed by PMC or its subcontractors such sum as may administratively be determined to be necessary to satisfy any liabilities of PMC or its subcontractors for unpaid wages and liquidated damages as provided in the provisions of paragraph C-8.3.

C-8.5 Subcontracts

C-8.5.1 PMC shall insert paragraphs C-8.2 through C-8.5 of this clause in all subcontracts, and shall require their inclusion in all subcontracts of any tier.

C-8.6 Records

C-8.6.1 PMC shall maintain payroll records containing the information specified in 29 C.F.R. 516.2(a). Such records shall be preserved for three years from the completion of the contract unless their earlier disposal is authorized by ERDA.

C-9.0 Officials Not to Benefit

C-9.1 No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

C-10.0 Covenant Against Contingent Fees

C-10.1 PMC warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by PMC for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

C-11.0 Convict Labor

C-11.1 In connection with the performance of work under this contract, PMC agrees not to employ any person undergoing sentence of imprisonment except as provided by Public Law 89-176, September 10, 1965 (18 U.S.C. 4082 (c) (2) and Executive Order 11755, December 29, 1973.

C-12.0 Labor Provisions

C-12.1 Davis-Bacon Act

C-12.1.1 All mechanics and laborers employed or working directly upon the site of the work shall be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Copeland Regulations (29 C.F.R. Part 3)), the full amounts due at time of payment computed at wage rates not less than the aggregate of the basic hourly rates and the rates of payments, contributions, or costs for any fringe benefits contained in the wage determination decision of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between PMC or its subcontractors and such laborers and mechanics. A copy of such wage determination decision shall be kept posted by PMC at the site of the work in a prominent place where it can be easily seen by the workers.

C-12.1.2 PMC may discharge its obligation under this clause to workers in any classification for which the wage determination decision contains:

(1) Only a basic hourly rate of pay, by making payment at not less than such basic hourly rate, except as otherwise provided in the Copeland Regulations (29 C.F.R. Part 3); or

(2) Both a basic hourly rate of pay and fringe benefits payments, by making payment in cash, by irrevocably making contributions pursuant to a fund, plan, or program for, and/or by assuming an enforceable commitment to bear the cost of, bona fide fringe benefits contemplated by the Davis-Bacon Act, or by any combination thereof. Contributions made, or costs assumed, on other than a weekly basis shall be considered as having been constructively made or assumed during a weekly period to the extent that they apply to such period. Where a fringe benefit is expressed in a wage determination in any manner other than as an hourly rate and PMC pays a cash equivalent or provides an alternative fringe benefit, it shall furnish information with its payrolls showing how it determined that the cost incurred to make the cash payment or to provide the alternative fringe benefit is equal to the cost of the wage determination fringe benefit. In any case where PMC provides a fringe benefit different from any contained in the wage determination, it should similarly show how it arrived at the

hourly rate shown therefor. In the event of disagreement between or among the interested parties as to an equivalent of any fringe benefit, ERDA shall submit the question, together with its recommendations, to the Secretary of Labor for final determination.

C-12.1.3 The assumption of an enforceable commitment to bear the cost of fringe benefits, or the provision of any fringe benefits not expressly listed in section 1(b)(2) of the Davis-Bacon Act or in the wage determination decision forming a part of the contract, may be considered as payment of wages only with the approval of the Secretary of Labor pursuant to a written request by PMC. The Secretary of Labor may require PMC to set aside assets, in a separate account, to meet its obligations under any unfunded plan or program.

C-12.1.4 PMC shall require that any class of laborers or mechanics which is not listed in the wage determination decision and which is to be employed under the contract, shall be classified or reclassified conformably to the wage determination decision and ERDA shall report the action taken to the Secretary of Labor. If the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers or mechanics to be used, ERDA shall submit the question, together with its recommendation, to the Secretary of Labor for final determination.

C-12.1.5 In the event it is found by ERDA that any laborer or mechanic employed by PMC or any subcontractor directly on the site of the work covered by this contract has been or is being paid at a rate of wages less than the rate of wages required by paragraph C-12.1.1 of this clause, ERDA may (1) by written notice to the Government Prime Contractor terminate its right to proceed with the work, or such part of the work as to which there has been a failure to pay said required wages, and (2) prosecute the work to completion by contract or otherwise, whereupon PMC and its sureties shall be liable to the Government for any excess costs occasioned the Government thereby.

C-12.1.6 Paragraphs C-12.1.1 through C-12.1.5 of this clause shall apply to this contract to the extent that it is (1) a prime contract with the Government subject to the Davis-Bacon Act, or (2) a subcontract also subject to the Davis-Bacon Act under such prime contract.

C-12.2 Apprentices

C-12.2.1 Apprentices shall be permitted to work as such only when they are registered, individually, under a bona fide apprenticeship program registered with a State apprenticeship agency which is recognized by the Bureau of Apprenticeship and Training, United States Department of Labor; or, if no such recognized agency exists in a State, under a program registered with the aforesaid Bureau of Apprenticeship and Training. The allowable ratio of apprentices to journeymen in any craft classification shall be not greater than the ratio permitted to PMC as to its entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performed.

C-12.2.2 PMC shall furnish written evidence of the registration of its program and apprentices as well as of the ratios allowed and the wage rates required to be paid thereunder for the area of construction, prior to using any apprentices in the contract work.

C-12.3 Payrolls and Basic Records

C-12.3.1 PMC shall maintain payrolls and basic records relating thereto during the course of the work and shall preserve them for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name and address of each such employee, his correct classification, rate of pay (including rates of contributions for, or costs assumed to provide, fringe benefits), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever PMC has obtained approval from the Secretary of Labor as provided in paragraph C-12.1.3 of the clause entitled "Davis-Bacon Act," it shall maintain records which show the commitment, its approval, written communication of the plan or program to the laborers or mechanics affected and the costs anticipated or incurred under the plan or program.

C-12.3.2 PMC shall submit weekly a copy of all payrolls to ERDA. The Government Prime Contractor shall be responsible for the submission of copies of payrolls of all subcontractors. The copy shall be accompanied by a statement signed by PMC indicating that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Secretary of Labor, and that

the classifications set forth for each laborer or mechanic conform with the work he performed. Submission of the "Weekly Statement of Compliance" required under this contract and the Copeland Regulations of the Secretary of Labor (29 C.F.R., Part 3) shall satisfy the requirement for submission of the above statement. PMC shall submit also a copy of any approval by the Secretary of Labor with respect to fringe benefits which is required by paragraph C-12.1.3 of the clause entitled "Davis-Bacon Act."

C-12.3.3 PMC shall make the records required under this clause available for inspection by authorized representatives of ERDA and the Department of Labor, and shall permit such representatives to interview employees during working hours on the job.

C-12.4 Compliance with Copeland Regulations

C-12.4.1 PMC shall comply with the Copeland Regulations of the Secretary of Labor (29 C.F.R., Part 3) which are incorporated herein by reference.

C-12.5 Withholding of Funds

C-12.5.1 ERDA may withhold or cause to be withheld from the Government Prime Contractor so much of the accrued payments or advances as may be considered necessary (1) to pay laborers and mechanics employed by PMC or any subcontractor on the work the full amount of wages required by the contract, and (2) to satisfy any liability of PMC for liquidated damages under paragraph C-8.3 of the clause entitled "Contract Work Hours Standards Act--Overtime Compensation."

C-12.5.2 If PMC fails to pay any laborer or mechanic employed or working on the site of the work, all or part of the wages required by the contract, ERDA may, after written notice to the PMC, take such action as may be necessary to cause suspension of any further payments or advances until such violations have ceased.

C-12.6 Subcontracts

C-12.6.1 PMC agrees to insert the clauses entitled "Davis-Bacon Act," "Contract Work Hours Standards Act--Overtime Compensation," "Apprentices," "Payrolls and Basic Records," "Compliance with Copeland Regulations," "Withholding of Funds," "Subcontracts," and "Contract Termination - Debarment" in all subcontracts. The term "Contractor" or "PMC" as used in such clauses in any subcontract

shall be deemed to refer to the subcontractor except in the phrase "Government Prime Contractor."

C-12.7 Contract Termination - Debarment

C-12.7.1 A breach of the clauses entitled "Davis-Bacon Act," "Contract Work Hours Standards Act--Overtime Compensation," "Apprentices," "Payrolls and Basic Records," "Compliance with Copeland Regulations," "Withholding of Funds," and "Subcontracts" may be grounds for termination of the contract, and for debarment as provided in 29 C.F.R. 5.6.

C-13.0 [RESERVED]

C-14.0 Listing of Employment Openings

C-14.1 PMC agrees, in order to provide special emphasis to the employment of qualified disabled veterans and veterans of the Vietnam era, that all suitable employment openings of PMC which exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract and including those occurring at an establishment other than the one wherein the contract is being performed but excluding those of independently operated corporate affiliates, shall be offered for listing at an appropriate local office of the State employment service system wherein the opening occurs and to provide such reports to such local office regarding employment openings and hires as may be required: Provided, that if this contract is for less than \$10,000 or if it is with a State or local government the reports set forth in paragraphs C-14.3 and C-14.4 are not required.

C-14.2 Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment service or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. This listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein is intended to relieve PMC from any requirements in any statutes, Executive orders, or regulations regarding non-discrimination in employment.

C-14.3 The reports required by paragraph C-14.1 of this clause shall include, but not be limited to, periodic

reports which shall be filed at least quarterly with the appropriate local office or, where PMC has more than one establishment in a State, with the central office of the State employment service. Such reports shall indicate for each establishment (i) the number of individuals who were hired during the reporting period, (ii) the number of those hired who were disabled veterans, and (iii) the number of those hired who were nondisabled veterans of the Vietnam era. PMC shall submit a report within 30 days after the end of each reporting period wherein any performance is made under this contract. PMC shall maintain copies of the reports submitted until the expiration of 1 year after final payment under the contract, during which time they shall be made available, upon request, for examination by any authorized representatives of ERDA.

C-14.4 Whenever PMC becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State wherein it has establishments of the name and location of each such establishment in the State. As long as PMC is contractually bound to these provisions and has so advised the State employment service system, there is no need to advise the State system of subsequent contracts. PMC may advise the State systems when it is no longer bound by this contract clause.

C-14.5 This clause does not apply to the listing of employment openings which occur and are filed outside of the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

C-14.6 This clause does not apply to openings which PMC proposes to fill from within its own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of its own organization or employer-union arrangement for that opening.

C-14.7 As used in this clause:

C-14.7.1 "All suitable employment openings" includes, but is not limited to, openings which occur in the following job categories: Production and non-production; plant and office; laborers and mechanics; supervisory and nonsupervisory; technical; and executive, administrative, and professional openings which are compensated on a salary basis of less than \$18,000 per year. This term includes

full-time employment, temporary employment of more than 3 days' duration, and part-time employment. It does not include openings which PMC proposes to fill from within its own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement.

C-14.7.2 "Appropriate office of the State employment service system" means the local office of the Federal-State national system of public employment offices with assigned responsibility for serving the area of the establishment where the employment opening is to be filled, including the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

C-14.7.3 "Openings which PMC proposes to fill from within its own organization" means employment openings for which no consideration will be given to persons outside PMC's own organization (including any affiliates, subsidiaries, and parent companies), and includes any openings which the contractor proposes to fill from regularly established "recall" or "rehire" lists.

C-14.7.4 "Openings which PMC proposes...to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings for which no consideration will be given to persons outside of a special hiring arrangement, including openings which PMC proposes to fill from union halls, which is part of the customary and traditional hiring relationship which exists between PMC and representatives of its employees.

C-14.7.5 "Disabled veteran" means a person entitled to disability compensation under laws administered by the Veterans Administration for a disability rated at 30 percentum or more, or a person whose discharge or release from active duty was for a disability incurred or aggravated in line of duty.

C-14.7.6 "Veteran of the Vietnam era" means a person (A) who (i) served on active duty with the Armed Forces for a period of more than 180 days, any part of which occurred after August 5, 1964, and was discharged or released therefrom with other than a dishonorable discharge, or (ii) was discharged or released from active duty for service-connected disability if any part of such duty was performed after August 5, 1964, and (B) who was so discharged or released within the 48 months preceding his application for employment covered by this clause.

C-14.8 If any disabled veteran or veteran of the Vietnam era believes that PMC (or any first-tier subcontractor) has failed or refuses to comply with the provisions of this contract clause relating to giving special emphasis in employment to veterans, such veteran may file a complaint with the veterans' employment representative at a local State employment service office who will attempt to informally resolve the complaint and then refer the complaint with a report on the attempt to resolve the matter to the State office of the Veterans' Employment Service of the Department of Labor. Such complaint shall then be promptly referred through the Regional Manpower Administration to the Secretary of Labor who shall investigate such complaint and shall take such action thereon as the facts and circumstances warrant consistent with the terms of this contract and the laws and regulations applicable thereto.

C-14.9 PMC agrees to place this clause (excluding this paragraph C-14.9) in any subcontract directly under this contract.

C-15.0 Cost Accounting Standards

C-15.1 Unless the Cost Accounting Standards Board has prescribed rules or regulations exempting the PMC or this contract from standards, rules, and regulations promulgated pursuant to 50 U.S.C. App. 2168 (Public Law 91-379, August 15, 1970), PMC in connection with this contract shall:

C-15.1.1 By submission of a Disclosure Statement, disclose in writing its cost accounting practices as required by regulations of the Cost Accounting Standards Board. The required disclosures must be made prior to contract award unless ERDA provides a written notice to the contractor authorizing post-award submission in accordance with regulations of the Cost Accounting Standards Board. The practices disclosed for this contract shall be the same as the practices currently disclosed and applied on all other contracts and subcontracts being performed by the contractor and which contain this COST ACCOUNTING STANDARDS clause. If PMC notifies ERDA that the Disclosure Statement contains trade secrets and commercial or financial information which is privileged and confidential, the Disclosure Statement will be protected and will not be released outside of the Government.

C-15.1.2 Follow consistently the cost accounting practices disclosed pursuant to C-15.1.1 above in accumulat-

ing and reporting contract performance cost data concerning this contract. If any change in disclosed practices is made for purposes of any contract or subcontract subject to Cost Accounting Standards Board requirements, the change must be applied prospectively to this contract, and the Disclosure Statement must be amended accordingly. If the contract price or cost allowance of this contract is affected by such changes, adjustment shall be made in accordance with subparagraph C-15.1.4 or C-15.1.5 below, as appropriate.

C-15.1.3 Comply with all Cost Accounting Standards in effect on the date of award of this contract or if PMC has submitted cost or pricing data, on the date of final agreement on price as shown on the contractor's signed certificate of current cost or pricing data. PMC shall also comply with any Cost Accounting Standard which hereafter becomes applicable to a contract or subcontract of PMC. Such compliance shall be required prospectively from the date of applicability to such contract or subcontract.

C-15.1.4 (a) Agree to an equitable adjustment if the contract cost is affected by a Disclosure Statement change which PMC is required to make pursuant to C-15.1.3 above. If PMC has not been required to file a Disclosure Statement but is required pursuant to C-15.1.3 above to change an established practice, then an equitable adjustment shall similarly be agreed to.

(b) Negotiate with ERDA to determine the terms and conditions under which a change to either a disclosed cost accounting practice or an established cost accounting practice, other than a change under (4) (A), above, may be made. A change to a practice may be proposed by either the Government or PMC, provided, however, that no agreement may be made under this provision that will increase costs paid by the United States.

C-15.1.5 Agree to an adjustment of the contract price or cost allowance, as appropriate, if it or a subcontractor fails to comply with an applicable Cost Accounting Standard or to follow any practice disclosed pursuant to subparagraphs C-15.1.1 and C-15.1.2 above and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States together with interest thereon computed at the rate determined by the Secretary of the Treasury pursuant to Public Law 92-41, 85 Stat. 97, or 7 percent per annum, whichever is less, from the time the payment by the United States was made to the time the adjustment is effected.

C-15.2 If the appropriate parties fail to agree whether PMC or a subcontractor has complied with an applicable Cost Accounting Standard, rule, or regulation of the Cost Accounting Standards Board and as to any cost adjustment demanded by the United States, such failure to agree shall be a dispute concerning a question of fact within the meaning of the disputes clause of this contract.

C-15.3 PMC shall permit any authorized representative of the head of the agency, of the Cost Accounting Standards Board, or of the Comptroller General of the United States to examine and make copies of any documents, papers, or records relating to compliance with the requirements of this clause.

C-15.4 PMC shall include in all negotiated subcontracts which it enters into the substance of this clause and shall require such inclusion, except paragraph C-15.2, in all lower-tier subcontracts, except that this requirement shall apply only to negotiated subcontracts in excess of \$100,000 where the price negotiated is not based on:

(i) Established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(ii) prices set by law or regulation.

However, if this is a contract with an agency which permits subcontractors to appeal final decisions of ERDA directly to the head of the agency or his duly authorized representative, then PMC shall include the substance of paragraph C-15.2 as well.

C-15.5 The terms defined in Sec. 331.20 of Part 331 of Title 4, Code of Federal Regulations (4 CFR 331.20) shall have the same meanings herein. As there defined, "negotiated subcontract" means "any contract except a firm fixed-price subcontract made by a contractor or subcontractor after receiving offers from at least two firms not associated with each other or with such contractor or subcontractor, providing (1) the solicitation to all competing firms is identical, (2) price is the only consideration in selecting the subcontractor from among the competing firms solicited, and (3) the lowest offer received in compliance with the solicitation from among those solicited is accepted."

APPENDIX D

ADDITIONAL PRINCIPAL OBLIGATIONS OF TVA
AND ADDITIONAL TERMS AND CONDITIONS
PERTAINING THERETO

D-1.0 General Performance Standards

D-1.1 TVA will use its best efforts to perform services and render assistance pursuant to this contract in an efficient and workmanlike manner.

D-1.2 The parties hereto will utilize the personnel, services, and other assistance provided by TVA pursuant to this contract in an effective and efficient manner.

D-2.0 Fiscal Obligations

D-2.1 Except for TVA's direct contribution of \$21.7 million to BRC, transfer of the custody of the plant site to ERDA pursuant to paragraph D-3.1, provision of the transmission facilities described in paragraph D-3.4, and subject to the provisions of paragraphs D-2.2, D-2.3, and D-2.4, ERDA will reimburse TVA for all direct and indirect expenses incurred by TVA in connection with TVA's Project Activities. ERDA will make reimbursements to TVA monthly, promptly upon receipt of invoice. ERDA may advance funds to TVA for expenses upon the mutual agreement of ERDA and TVA; provided, however, that ERDA shall advance funds to TVA upon request by TVA whenever TVA's

responsibilities hereunder require TVA to make an expenditure which is unusually large in comparison to TVA's annual Project budget.

D-2.2 No reimbursement will be provided for salary, travel, or overhead with respect to the involvement in the Project of TVA's top management at the level of a Manager of an Office or above.

D-2.3 Accounting for power produced or used by the Plant will be as provided in paragraph D-11.2, and will not be subject to the provisions of this paragraph D-2.0.

D-2.4 From and after the Effective Date TVA shall continue to credit ratably until July 31, 1983, or the date of termination, whichever occurs first, against ERDA's obligations for payment of costs for the performance of work and services under this contract or under the contract entered into by TVA and ERDA pursuant to paragraph 3.1 of this contract, a contribution credit (hereinafter called "contribution credit") of \$2,000,000 less the aggregate amount of certain costs incurred by TVA from January 13, 1972, to July 31, 1973, in connection with preparation for and in furtherance of Project Activities, which costs have been determined not to be "allowable Project costs." In this respect \$_____ of the contribution credit shall be credited each month against invoices submitted to ERDA by TVA pursuant to this contract. To the extent the contribution credit in any given month

exceeds the amount of the invoice or invoices submitted to ERDA by TVA in that month, the unapplied balance of the contribution credit for that month shall be carried forward to the next month

D-2.5 TVA will determine direct and indirect expenses in accordance with generally accepted accounting principles.

D-2.6 Prior to the beginning of each fiscal year, TVA and ERDA shall agree on an annual budget of TVA's direct and indirect expenses expected to be incurred during the fiscal year in connection with TVA's project activities under this contract. By mutual agreement, TVA and ERDA may amend TVA's budget at any time.

D-2.7 TVA will keep ERDA informed concerning the adequacy of budgeted funds and will notify ERDA whenever in TVA's judgment funds soon will be insufficient. When such conditions exist, TVA shall be excused from performance under this contract until sufficient funds become available. Except as necessary to meet the requirements of the operating license, TVA shall not make commitments or expend funds in excess of its annual budget.

D-3.0 Plant Site and Related Facilities

D-3.1 Subject to the terms of this contract and all existing easement rights, commitments and access agreements, TVA hereby agrees to transfer to ERDA the custody of those

portions of the property described in Appendix A which are reasonably required for the purpose of designing, constructing, and operating the LMFBR Plant. Consistent with Principal Project Objectives, such portions of the property described in Appendix A needed for the Project will be selected with a view toward preserving as much of the remainder of the property described in Appendix A as possible for development of additional power facilities by TVA at a future date. Prior to the start of construction, the Administrator of ERDA will describe in a letter to TVA those specific portions of the property described in Appendix A on which the nuclear steam supply system, turbine-generators, switchyards, access roads, and appropriate related facilities will actually be constructed. Thereupon TVA shall transfer to ERDA custody of those portions of the property described in Appendix A which are described in said letter; provided, that TVA shall at no cost to itself have a right to make reasonable use of access roads, rail, and barge facilities where required in its normal power programs.

D-3.2 [Reserved]

D-3.3 ERDA shall be fully liable for conditions upon the portions of the property selected for the Plant pursuant to paragraph D-3.1, and for any liability arising from its use, in the same manner as one who owns or is in exclusive possession of real property under any applicable law or laws.

D-3.4 After consultation with ERDA to assure meeting licensing requirements, TVA will at no cost to the Project provide two independent 161-kV transmission links to the Plant switchyard which in TVA's judgment are consistent with Plant design and suitable for accommodating the power flow to and from the Plant, taking into account TVA's system power flow and security considerations. TVA will absorb all costs associated with making said transmission links to the Plant switchyard available to ERDA. Any temporary tie-in, relocation of any on-site transmission facilities, any rearrangements of existing facilities, or additions of facilities required shall be at ERDA's expense and shall be provided as mutually agreed upon between TVA and ERDA.

D-4.0 Personnel

D-4.1 TVA will loan to the Project such employees as PMC shall from time to time request and which TVA deems it is able to lend. Such employees shall be loaned for work at such locations and for such periods of time as shall be mutually agreed between TVA and PMC. In addition, TVA will use its best efforts to help recruit people with needed skills to work for PMC as part of PMC's staff.

D-4.2 With respect to the assignment and performance of day-to-day duties, employees loaned hereunder shall be under the direct supervision of PMC or ERDA, as appropriate.

For all other purposes TVA shall continue to exercise supervision and control over all loaned employees.

D-4.3 Subject to reimbursement as provided in paragraph D-2.0 TVA will pay the salary of loaned employees and otherwise be responsible for all other benefits to which such loaned employees are normally entitled as employees of TVA; provided, that upon request of TVA, PMC or ERDA, as appropriate, shall be responsible for paying travel and subsistence for loaned employees while traveling at the request of PMC or ERDA, as appropriate. TVA will move loaned employees and their families to such locations as PMC or ERDA, as appropriate, may request.

D-4.4 It is understood and agreed that loaned employees and other TVA employees engaged in Project Activities will continue to be subject to such statutes, executive orders, and TVA personnel regulations to which other TVA employees are subject.

D-4.5 At the request of either TVA, or PMC, any loaned employee's relationship with PMC may be terminated at any time. Thereafter the daily supervision of such employee shall be the sole responsibility of TVA.

D-4.6 TVA will secure from loaned employees such agreements pertaining to information, data, copyrights and patents as may be reasonably requested by PMC or ERDA from time to time and which are consistent with this contract.

D-5.0 Financial Services to be Provided by TVA

D-5.1 TVA shall provide PMC such bookkeeping and related services as PMC may from time to time request. Such services may include assistance in preparing budgets, keeping books of account, disbursing and receiving monies on behalf of PMC and providing auditing services.

D-5.2 Except as otherwise required by this contract, TVA shall employ the practices, procedures, and methods generally employed in its own operations in providing the above services, and in addition shall comply with procedures established by PMC with respect to the investment of funds and approvals for disbursements.

D-6.0 [Reserved]

D-7.0 [Reserved] .

D-8.0 [Reserved]

D-9.0 Availability of TVA's Senior Management for Consultation

D-9.1 TVA shall make available its senior management, at no cost to the Project, and at times and places convenient to its senior management, for consultation concerning any aspect of the Project with PMC or ERDA.

D-9.2 For purposes of this section, TVA's senior management shall consist of the Board of Directors, General Manager, and the heads of all offices.

D-10.0 TVA's Option to Purchase Plant

D-10.1 ERDA hereby grants TVA an exclusive option to buy the Demonstration Plant upon the terms and conditions set out in this paragraph D-10.0.

D-10.2 Approximately six months prior to the end of the five-year period specified in paragraph 6.0 or at such earlier time as TVA, CE, BRC and ERDA may agree to in writing, TVA may exercise its option to purchase the Plant and pay for it as provided in paragraph D-10.3. Any money so paid by TVA to ERDA shall be applied to Project costs except as TVA, CE, BRC, and ERDA may otherwise agree in writing. Unless and until TVA elects to purchase the Demonstration Plant as provided in this contract, TVA's costs for the operation and maintenance of the Plant shall be reimbursed as provided in paragraph D-2.0 and TVA shall pay for electrical output as provided in paragraph D-11.0.

D-10.3 Purchase by TVA of the Demonstration Plant at the end of the Demonstration Period will be upon the condition that, in TVA's judgment, the Plant has met the acceptance criteria defined in paragraph D-10.3.1 below. In the event of purchase, TVA will pay to ERDA an amount equal to the value

of the Plant on the TVA system as determined in accordance with paragraph D-10.3.2 below.

D-10.3.1. Acceptance Criteria

(1) All significant safety, licensing, and environmental issues relevant to the continued operation of the Plant must have been resolved.

(2) The suitability and flexibility of the Plant to operate as a dependable source of capacity on the TVA system must be demonstrated.

(3) The operability and maintainability of the NSSS and related equipment must be satisfactorily demonstrated based on experience gained during the Demonstration Period, and assessment of future expectations must indicate acceptable performance.

(4) The Plant must have demonstrated an acceptable level of reliability and availability during the Demonstration Period and must be capable of achieving an acceptable level of reliability over the expected useful remaining life of the Plant. Unless otherwise agreed, it must have demonstrated the ability to operate continuously at full rated output for at least 1000 hours; it must have achieved over a two-year period an average availability of at least 75 percent and an average capacity factor of 60 percent; (in determining whether or not the Plant meets these criteria consideration will be given to outages TVA has agreed are

desirable for purposes unrelated to Plant reliability and/or availability)); and assessment of expected future reliability must indicate an average availability of at least 80 percent, and an average capacity factor capability of at least 70 percent.

(5) It must have been demonstrated that the projected fuel performance and fuel cycle economics upon which the value of the Plant is based, according to the provisions of paragraph D-10.3.2 can be achieved and the Plant must have economic value as determined by paragraph D-10.3.2.

D-10.3.2 Criteria for Determining Economic Value

TVA, in reaching a conclusion as to the value of the LMFBR Demonstration Plant on the TVA system, shall take into account the cost of decommissioning the Plant at the end of the Plant's useful life on TVA's power system. TVA expects that in arriving at its conclusion it will employ the following: the value of the Plant is that value imputed to the Demonstration Plant at the time TVA elects to purchase the Plant such that the total cost (adjusted to present value at that time) of TVA's power system operation and expansion for the period following the election to purchase the Demonstration Plant to the end of its expected remaining service life would be the same as the total adjusted future cost of

powersystem operation and expansion, assuming TVA did not purchase the Demonstration Plant. The calculation of discounted costs will be performed using TVA system modeling methods and evaluation techniques in use at the time of the evaluation to be applied in a manner consistent with normal TVA planning practices. TVA expects to take into account, but not be limited to, the following considerations: condition of equipment; expected remaining service life of Plant and associated facilities; expected forced and scheduled outage rates; purchase price of core and blanket fuel assemblies including the plutonium; expected cost and availability of complete fuel cycle services; estimated Plant operation and maintenance cost; cost of supporting services; cost of decommissioning the Plant; losses in generating capacity and operating flexibility; risk factors; and other appropriate cost and evaluation factors normally used by TVA. In applying the criteria set forth in paragraphs D-10.3.1 and this D-10.3.2 due consideration will be given to the continuing role the Plant may play in the nation's overall LMFBR program. TVA shall, within the time specified in paragraph D-10.2, above, notify ERDA of its decision whether or not to purchase the Plant, and if the decision is affirmative, of its conclusion (and reasoning) respecting the monetary value thereof. If ERDA concludes, within a reasonable period of time following its receipt of notification of TVA's affirmative decision and conclusion

respecting value, that it disagrees with TVA's judgment as to the monetary value of the Demonstration Plant, it shall notify TVA accordingly and TVA and ERDA shall review and confer on the entire situation. If the disagreement is not resolved as a result of such review and conferring, then ERDA shall retain the Demonstration Plant.

Any payment due ERDA will be made in a lump sum or on such other terms as TVA and ERDA may agree at the time.

D-11.0 Use and Payment for Energy Produced by Plant

D-11.1 TVA will take for its system all of the electric output of the Plant and pay for it as provided in paragraph D-11.2, below.

D-11.2 The amount to be reimbursed by TVA for the value of the energy produced by the Demonstration Plant will be based on the value of the net electrical output to the TVA transmission system (gross generation less Demonstration Plant use). This value, and thus the amount to be reimbursed by TVA, is the same as the highest incremental cost TVA would have incurred at generating plants on its system which it would otherwise have used for producing the same amount of energy or which it would have incurred in acquiring such energy from other sources through interchange and/or purchase.

: Applicable incremental costs shall be determined hourly in accordance with TVA's established practices, using information

from TVA's power dispatch records. Appropriate adjustment will be made for transmission losses.

During periods when the Plant is a net consumer of electrical energy (Demonstration Plant use is greater than gross generation), TVA will be reimbursed for the incremental cost of generating and/or purchasing the energy so used with appropriate adjustments for transmission losses. Construction power will be charged in accordance with TVA's standard rate structure.

Records of Demonstration Plant net electrical output and relevant cost data will be subject to review by ERDA. TVA will submit a statement at the end of each month reflecting the cost of energy produced and consumed and a debit or credit will be made as appropriate against the reimbursable cost due TVA.

D-12.0 Reports, Information, and Review of Plans

D-12.1 TVA shall make reports to ERDA on its activities under this contract, including periodic, topical, and cost reports of Plant operation and the results of tests, studies, and special investigations. Additionally, TVA shall submit such information to ERDA, CE, or PMC respecting its activities in connection with the demonstration-operation phase as ERDA, GE, or PMC may reasonably request. TVA shall provide ERDA and PMC the opportunity to review and comment on plans and

procedures for the operation and maintenance of the Plant and to identify particular modifications to TVA's operational methods which either ERDA or PMC believes would further the Principal Project Objectives. In addition, TVA will give ERDA and PMC early notice of potential problems and difficulties relative to operation of the Plant, including, among other things, failure to meet tests, schedules or demonstration objectives, force majeure or other difficulties which have or may have a significant impact upon the Project.

D-12.2 In the performance of this work TVA must have timely access to information which can only be supplied by the A-E, RM, constructor or their subcontractors. This includes design drawings, system design descriptions, operating manuals, equipment operating procedures, spare parts lists, and so forth. Contracts with the A-E, RM, constructor and other subcontractors, as appropriate, shall indicate that this information is to be made available to TVA on a timely schedule.

D-13.0 Operating Agreement

D-13.1 TVA will conduct preoperational test programs and thereafter will operate and maintain the Plant throughout the term of the demonstration period pursuant to a separate agreement with ERDA which agreement will incorporate terms and conditions substantially as set forth in paragraph D-13.2. The financial arrangements governing the provision of services

pursuant to the operating agreement and reimbursement therefor shall be substantially the same as those contained in this Appendix D.

D-13.2 The terms and conditions referred to in paragraph D-13.1 above are as follows:

"D-13.2.1 With respect to operation and maintenance of the Plant, and with respect to preoperational testing, TVA will be responsible for the development and application of a Quality Assurance Program (QA) acceptable to PMC and ERDA.

"D-13.2.2 TVA will operate, test, and maintain the Plant throughout the term of the demonstration period in accordance with the plans, policies, procedures and organization developed pursuant to paragraph D-13.2.4. The Plant is to be operated as nearly as possible as a normal part of the TVA system after the initial period of startup and testing and will be operated consistent with operating schedules and programs established by mutual agreement between ERDA and TVA. Such schedules and programs shall be consistent with the objectives set forth in this contract; provided, that in any event TVA shall have final say with respect to any matters it deems essential to safety or to the fulfillment of licensing requirements. Except as otherwise specifically

provided, during the demonstration period operation of the Plant will be under TVA control.

"D-13.2.3 TVA shall be responsible for development and implementation of all training programs and shall provide, train, and maintain, supervisory, administrative, technical, operating, maintenance, and other personnel required for the operation of the Plant. Said training programs shall be developed after consultation with ERDA.

"D-13.2.4 TVA shall be responsible for development of the plans, policies, procedures, and organization required to assure that the Plant is operated and maintained in a safe and efficient manner during normal and emergency conditions. Said plans, policies, procedures and organization shall be developed after consultation with ERDA.

"D-13.2.5 TVA will conduct preoperational test programs in accordance with detailed procedures reviewed and approved by TVA and ERDA.

"D-13.2.6 TVA shall be responsible for performing maintenance, repair, and modification work necessary for efficient, safe, and reliable operation of the Plant. It may be necessary to utilize the services of equipment suppliers or other specialists in their activities. TVA shall select and arrange for or approve the use of

such suppliers or specialists. TVA will consult with ERDA on non-routine matters pertaining to their activities.

"D-13.2.7 TVA shall perform all on-site fuel handling activities including receipt, storage, core loading and unloading, and preparation for shipment. By mutual agreement between ERDA and TVA, certain of these operations may be under the technical direction of others.

"D-13.2.8 Either through its own support organizations or by means of subcontract, TVA shall provide support functions as mutually agreed by TVA and ERDA. Such services may include:

"(1) Central office, administration, personnel, budget, and technical services.

"(2) Operational quality assurance standards and audit.

"(3) Turbine-generator inspection and maintenance.

"(4) Test and inspection of Plant electrical equipment that is critical to proper functioning of the TVA electrical grid. This may include Plant protective equipment coordination and system stability studies.

"(5) Preoperational baseline and inservice inspection of reactor components.

"(6) Maintenance services such as transformer and motor rewinding that must be performed with specialized equipment at large service shops.

"(7) Environs monitoring, including maintenance of sample station, collection of samples, analytical analyses, data evaluation and reporting.

"(8)" Personnel dosimetry (film badge, whole body counting, and bioassay).

"(9) Medical services.

"(10) Portable instrument calibration services.

"(11) To the extent not included within the scope of ERDA's responsibilities pursuant to this contract, transportation to burial site and disposal of Plant radwaste (exclusive of that waste generated at the fuel reprocessing Plant) and other toxic materials.

"D-13.2.9 TVA shall arrange for discussions, consultation, and observation by technical and other personnel of interested organizations.

"D-13.2.10 Arrangements for training of utility industry personnel at the Plant will be made by PMC through BRC, subject to the following conditions:

"(1) TVA must approve the particular work assignment and training plan. TVA will judge suitability and qualification of assignees.

"(2) Assignees will work under TVA supervision and control and will be subject to TVA work rules, regulations, and procedures.

"(3) Salary, transportation, and living and other expenses will be paid by the assignee's employer.

"(4) Execution of indemnification, patents, security agreements and other agreements which in TVA's judgment are required or appropriate, consistent with the Project Agreements.

"D-13.2.11 TVA will be responsible for on-site fuel management with regard to demonstration aspects of the nuclear fuel in a utility environment. Overall fuel management plans, programs and related procedures shall be subject to review and approval by TVA. This will be done working with ERDA and its contractors in a manner which will assure that Project objectives are met. ERDA shall make provisions in its fuel supply contracts for TVA participation and provide for direct technical support to TVA from ERDA contractors.

"D-13.2.12 TVA shall assist or join in applications for all permits and licenses which may be required for the construction and operation of the Plant.

"D-13.2.13 ERDA and TVA agree that to the extent they are not both applicants for any license, the

nonapplicant party will give all assistance deemed necessary by the applicant party in applying for such licenses. Such assistance shall include but not be limited to, access to records and making available personnel for consultation and statements and/or appearances before application hearing or review bodies.

D-13.2.14 ERDA shall make such staff and other assistance available to TVA as TVA may reasonably request for the purpose of fulfilling its licensing obligations hereunder.

"D-13.2.15 ERDA shall, through contract provisions or other arrangements, assist as appropriate in the application for all permits and licenses necessary for the construction and operation of the Plant. Such assistance shall include access to documents necessary in any proceedings relating to such applications and making available personnel for consultation and statements and/or appearances before hearing or review bodies.

"D-13.2.16 Notwithstanding any other provisions of this contract, TVA shall have, and is hereby granted by the other parties to this contract, all authority and power necessary in order to operate the Plant safely, in an environmentally prudent manner, and in accordance with all applicable requirements of any duly constituted regulatory authority."

MODIFICATION NO. 1
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APPENDIX E

PROVISIONS GENERALLY APPLICABLE TO THE CONTRACT

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MODIFICATION NO. 1
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APPENDIX E

PROVISIONS GENERALLY APPLICABLE TO THE CONTRACT

E-1.0 Drawings, Designs, Data

E-1.1 All drawings, sketches, designs, design data, specifications, notebooks, technical and scientific data and information, and all photographs, negatives, reports, findings, recommendations, data and memoranda of every description relating thereto, as well as all copies of the foregoing relating to the work or any part thereof, shall be subject to inspection by ERDA at all reasonable times (for which inspection the proper facilities shall be afforded ERDA by the parties and their subcontractors), shall be the property of the Government and may be used by the Government for any purpose whatsoever without any claim on the part of PMC, TVA, CE and their subcontractors and vendors for additional compensation and shall, subject to the right of PMC, CE and TVA and their subcontractors and vendors to retain a copy of said material, be delivered to ERDA or otherwise disposed of by PMC, CE or TVA either as ERDA may from time to time direct during the progress of the work or in any event as ERDA shall direct upon expiration or termination hereunder. PMC's, CE's and TVA's right of retention and use shall be subject to the security, patent, and other provisions of this contract.

E-1.2 With respect to such materials, data and information as are not developed by subcontractors or other lower-tier contractors or vendors under or in the course of the PMC, TVA or CE commitments and with respect to such materials, data and information which ERDA may furnish PMC, CE or TVA, or their lower-tier contractors or vendors on a proprietary basis, said materials, data and information shall be treated as proprietary to the extent requested or approved by ERDA.

E-1.3 It is understood that, subject to any applicable ERDA security requirements and patent rights as set forth in this Appendix E, BRC and PMC, and the electric utilities and electric systems which contribute to Project funds (along with other electric utilities, electric systems and others to whom ERDA may afford such right) shall be afforded a royalty-free right to use and to have used on their behalf the data and information which becomes Government-owned pursuant to paragraph E-1.1 above; if ERDA does not

afford such right to other electric utilities and electric systems, PMC and BRC are authorized, and shall, afford such right to any such electric utility and electric system upon request.

E-2.0 Copyrights

E-2.1 PMC, TVA and CE, (i) agree that ERDA shall determine the disposition of the title to and the rights under any copyright secured by PMC, TVA and CE or their employees on copyrightable material first produced or composed under this contract and (ii) hereby grant to the Government a royalty-free, nonexclusive, irrevocable license to reproduce, translate, publish, use and dispose of, and to authorize others so to do, all copyrighted or copyrightable work not first produced or composed by PMC, TVA or CE in the performance of this contract but which is incorporated in the material furnished under the contract, provided that such license shall be only to the extent PMC, TVA or CE now have, or prior to the completion or final settlement of the contract may acquire the right to grant such license without becoming liable to pay compensation to others solely because of such grant.

E-2.2 PMC, CE and TVA agree that they will not knowingly include any copyrighted material in any written or copyrightable material furnished or delivered under this contract, without a license as provided for in paragraph E-2.1(ii) hereof, or without the consent of the copyright owner, unless specific written approval of ERDA to the inclusion of such copyrighted material is secured.

E-2.3 PMC, TVA and CE agree to report in writing to ERDA, promptly and in reasonable detail, any notice or claim of copyright infringement received by them with respect to any material delivered under this contract.

E-3.0 Inventions, Discoveries, Patents

E-3.1 Whenever any invention or discovery is made or conceived by PMC, TVA or CE, or their employees in the course of or under this contract, PMC, TVA or CE shall promptly furnish ERDA with complete information thereon; and ERDA shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and the rights in and to any invention or discovery and any patent application or patent that may result: Provided, however, that BRC and PMC, and each of the utilities which has executed a utility

contribution agreement will (along with other utilities and others to whom ERDA may afford such rights) receive an irrevocable, nonexclusive, royalty-free license with respect to any patent issued on any invention or discovery made or conceived by PMC, CE or TVA (or subcontractors) in the course of or under this contract (or subcontracts), to make use and sell thereunder or have others make use and sell thereunder on their behalf, in the construction, supply, manufacture or operation of LMFBR equipment or facilities and for the conduct of other LMFBR activities; it being agreed that if ERDA does not afford such rights to other electric utilities and electric systems, PMC and BRC are authorized, and shall, afford such rights to any such electric utility or electric system upon request.

Subject to these licenses, the judgment of ERDA on these matters shall be accepted as final; and PMC, TVA, and CE, for themselves and for their employees, agree that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of ERDA.

E-3.2 No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted by PMC, TVA, or CE or their employees with respect to any invention or discovery made or conceived in the course of or under this contract.

E-3.3 Except as otherwise authorized in writing by ERDA, PMC, TVA or CE will obtain patent agreements to effectuate the purposes of paragraphs E-3.1 and E-3.2 above from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

E-3.4 Except as otherwise authorized in writing by ERDA, PMC, TVA and CE will insert in all subcontracts and other commitments provisions making paragraphs E-3.1 through E-3.5 of this Article applicable thereto.

E-3.5 In order that public disclosure of information regarding scientific or technical developments made or conceived in the course of or under this contract will not adversely affect the patent interests of ERDA, patent approval for release and publication shall be secured from ERDA prior to any such release or publication.

E-3.6 With respect to any U.S. Patent Application filed by PMC, TVA or CE on any contract invention or

discovery made or conceived in the course of the contract, PMC, TVA or CE will incorporate in the first paragraph of the U.S. Patent Application the following statement:

"The invention described herein was made in the course of, or under, a contract (if desired, may substitute contract with identifying number) with the U.S. Energy Research and Development Administration."

E-3.7 It is agreed that the Government shall hold PMC, TVA and CE harmless from liability of any kind arising from infringement of patent rights in the course of the work performed under this contract, in view of the following facts:

- a. Said parties have not made an investigation as to the possibility of patent infringement; and
- b. The parties hereto desire to avoid the delay incident to a patent investigation; and

PMC, TVA or CE shall give prompt notice in writing to ERDA of any action filed or claim against PMC, TVA or CE for infringement of patent rights in the course of the work performed by PMC, TVA or CE under this contract. Except as otherwise directed by ERDA in writing, PMC, TVA and CE shall furnish promptly to ERDA copies of all pertinent papers received by PMC with respect to any such action or claim. If required by ERDA, PMC, TVA or CE (at the Government's expense, by proper arrangement) shall assist the Government in the settlement or defense of such action or claim and shall furnish such evidence in their possession as may be required by the Government in the settlement or defense of such action or claim.

E-4.0 Equal Opportunity

E-4.1 PMC, TVA and CE during the performance of this contract, agree as follows:

E-4.1.1 Each party will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Each party will take affirmative action to ensure that applicants are employed; and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer;

recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Each party agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by ERDA (or by TVA with respect to TVA's activities) setting forth the provisions of this Equal Opportunity clause.

E-4.1.2 PMC, TVA and CE will, in all solicitations or advertisements for employees placed by or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

E-4.1.3 PMC, TVA and CE will send to each labor union or representative of workers with which they have a collective bargaining agreement or other contract or understanding a notice advising the labor union or workers' representative of their commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

E-4.1.4 PMC, TVA and CE will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

E-4.1.5 PMC, TVA and CE will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

E-4.1.6 In the event of PMC's, TVA's or CE's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in part, and PMC may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

E-4.1.7 PMC, TVA and CE will include the provisions of paragraphs E-4.1.1 through E-4.1.7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. Each party will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event PMC, TVA or CE becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, PMC, TVA or CE may request the United States to enter into such litigation to protect the interests of the United States.

E-5.0 Broad Right of Inspection

E-5.1 ERDA, TVA, CE and PMC shall have the right to inspect work and activities under this contract and under the other Principal Project Agreements at such reasonable times and in such manner as they shall deem appropriate. ERDA shall have the right to station an ERDA-designated representative or representatives at the sites of Project Activities; provided that except as otherwise agreed this sentence will not be applicable to purchase orders or contracts for off-the-shelf or catalog items.

E-6.0 Assignment

E-6.1 Neither this contract nor any interest therein nor claim thereunder shall be assigned or transferred by PMC, TVA or CE except as expressly authorized in writing by ERDA.

E-7.0 Security

E-7.1 It is mutually expected that the activities under this contract will not involve Restricted Data or other classified information or material. It is understood, however, that if in the opinion of any party this expectation changes prior to the expiration or termination of all activities under this contract, said party shall notify the other parties accordingly in writing without delay. In any event, the parties shall classify, safeguard, and otherwise act with respect to all Restricted Data and other classified information and material, in accordance with applicable law

and the requirements of ERDA, and shall promptly inform ERDA in writing if and when Restricted Data or other classified information or material becomes involved. The term "Restricted Data" as used in this provision means all data concerning the design, manufacture, or utilization of atomic weapons, the production of special nuclear material or the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Atomic Energy Act of 1954, as amended.

E-7.2 PMC, TVA and CE agree to conform to all security regulations and requirements of ERDA.

E-7.3 The term "Restricted Data," as used in this clause, means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Atomic Energy Act of 1954.

E-7.4 The term "Formerly Restricted Data," as used in this clause, means all data removed from the Restricted Data category under section 142 d. of the Atomic Energy Act of 1954, as amended.

E-7.5 PMC, TVA and CE shall not permit any individual to have access to Restricted Data, Formerly Restricted Data, or other classified information, except in accordance with the Atomic Energy Act of 1954, as amended, and ERDA's regulations or requirements applicable to the particular type or category of classified information to which access is required.

E-7.6 It is understood that disclosure of Restricted Data, Formerly Restricted Data, or other classified information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data, Formerly Restricted Data, or any other classified matter that may come to the contractor or any person under the contractor's control in connection with the work under this contract, may subject PMC, TVA or CE or their agents, employees, or subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.; 18 U.S.C. 793 and 794; and Executive Order 10501, as amended.)

E-7.7 Except as otherwise authorized in writing by ERDA, PMC, TVA and CE shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

E-8.0 Priorities, Allocations and Allotments

E-8.1 PMC, TVA and CE shall follow the provisions of DMS Regulation 1 and all other applicable regulations and orders of the Bureau of Domestic Commerce in obtaining controlled materials and other products and materials needed to perform this contract.

E-9.0 Compliance with Laws

E-9.1 PMC, TVA and CE shall procure or cause to be procured all necessary permits or licenses and abide by all applicable laws, regulations and ordinances of the United States, territories, and political subdivisions in which work under this contract is performed.

E-10.0 Examination of Records

E-10.1 PMC, TVA and CE agree that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of PMC, TVA and CE involving transactions related to this contract.

E-10.2 PMC, TVA and CE further agree to include in all their subcontracts hereunder and in PMC's contract with BRC, a provision to the effect that the subcontractor or BRC as the case may be agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under the subcontract, or under the PMC-BRC contract as the case may be, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor or BRC involving transactions related to the subcontract or the PMC-BRC contract. The term "subcontract" as used in this clause excludes (1) purchase orders not exceeding \$2,500 and (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

E-10.3 The periods of access and examination described in paragraphs E-10.1 and E-10.2 above, for records

which relate to (1) appeals under the "Disputes" provision of this contract, (2) litigation or the settlement of claims arising out of the performance of this contract, or (3) costs and expenses of this contract as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims or exceptions have been disposed of.

E-10.4 Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

E-11.0 Property

E-11.1 The Government reserves the right to furnish any property or services required for the performance of the work under this contract.

E-11.2 Title to all property furnished by the Government shall remain in the Government except as otherwise provided in this article. Except as otherwise provided by ERDA, title to all materials, equipment, supplies, and tangible personal property of every kind and description purchased by PMC, or CE, or TVA for the cost of which it is entitled to be reimbursed as a direct item of cost under this contract, shall pass directly from the vendor to the Government. Subject to its obligation of reimbursement, the Government reserves the right to inspect, and to accept or reject, any item of such property. PMC, CE or TVA shall make such disposition of rejected items as ERDA shall direct. Title to other property, the cost of which is reimbursable to PMC, CE or TVA under this contract, shall pass to and vest in the Government upon (i) issuance for use of such property in the performance of this contract, or (ii) commencement of processing or use of such property in the performance of this contract, or (iii) reimbursement of the cost thereof by the Government whichever first occurs. Property furnished by the Government and property purchased or furnished by PMC, CE or TVA, title to which vests in the Government, under this paragraph is hereinafter referred to as Government Property. Title to Government Property shall not be affected by the incorporation of the property into or the attachment of it to any property not owned by the Government, nor shall such Government Property or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty.

E-11.3 To the extent approved by ERDA, PMC, CE or TVA shall identify said property coming into its

possession or custody by marking or segregating it in such a way, satisfactory to ERDA, as shall indicate its ownership by the Government.

E-11.4 PMC, CE or TVA shall make such disposition of said ERDA property as ERDA shall direct. When authorized in writing by ERDA during the progress of the work or upon completion or termination of this contract, said parties may, upon such terms and conditions as ERDA may approve, sell or exchange such property. The amount received as the result of any disposition shall be credited to the account of ERDA, as ERDA may direct. Upon completion of the work or the termination of this contract, PMC, CE or TVA shall render an accounting, as prescribed by ERDA, of said ERDA property.

E-11.5 The parties shall take all reasonable precautions, as directed by ERDA or TVA, respectively, or in the absence of such directions in accordance with sound industrial practice, to safeguard and protect ERDA or TVA property. Special measures shall be taken in the protection of and accounting for special nuclear material or any classified materials involved in the performance of this contract, in accordance with the regulations and requirements of ERDA.

E-11.6 Said parties shall not be liable for loss or destruction of or damage to said ERDA or TVA property unless such loss, destruction, or damage results from willful misconduct or lack of good faith on the part of any of the managerial personnel of any of said parties or unless such loss, destruction or damage results from a failure, due to willful misconduct or lack of good faith, on the part of any of such managerial personnel to take all reasonable steps to comply with any appropriate written directives of TVA or ERDA, respectively, to safeguard such property. The term "managerial personnel" as used herein means directors, and officers of TVA, CE and PMC and PMC's General Manager (and the PMC individual next in charge).

E-11.7 Upon the happening of any loss or destruction of or damage to any property hereunder, ERDA, PMC, TVA or CE, as the case may be, shall immediately inform ERDA or TVA of the occasion and extent thereof, shall take all reasonable steps to protect the property remaining, and shall repair or replace the lost, destroyed, or damaged property if and as directed by ERDA or TVA.

E-11.8 Except as ERDA or TVA may authorize in writing property hereunder shall be used only for performance under this contract.

E-12.0

Bonds, Insurance, Taxes, Litigation, and Claims

E-12.1 PMC shall obtain such general liability and other insurance as required by law or it deems appropriate. All such policies purchased by PMC shall include PMC, PSC, CE, TVA, BRC, the United States of America, and their officers, agents, and employees as named insureds to the extent liability grows out of Project Activities.

E-12.2 The licensee(s) will maintain appropriate insurance coverage against nuclear hazards as required by NRC pursuant to section 170 of the Atomic Energy Act of 1954, as amended. PMC, to the extent it deems necessary, will also obtain and maintain appropriate property damage insurance in such amounts, if any, as it, ERDA and TVA agree should be obtained. The indemnification agreement under section 170 of the Atomic Energy Act of 1954, as amended, shall be obtained pursuant to applicable regulations of the NRC and shall be in the aggregate amount of the maximum permissible thereunder.

E-12.3 PMC shall obtain and require contractors and subcontractors of any tier to obtain such insurance and bonds as PMC deems necessary to fully protect the interests of the Project.

E-12.4 ERDA shall reimburse PMC, CE and TVA for all federal, state and local taxes, fees, licenses, or permits which PMC, CE or TVA may be required to pay as a result of Project Activities. PMC, CE and TVA shall notify ERDA of any such items which PMC, CE or TVA have reason to believe are or may be applicable. To the extent there is any question with respect to the validity or applicability of any such items or requirements, ERDA will take such steps as it may deem to be necessary to defend against the collection of such items or imposition of such requirements. PMC, CE and TVA agree to either pay, comply, or refrain from paying or complying, as ERDA may direct, until the particular matter has been properly adjudicated in a court of competent jurisdiction, or otherwise resolved to the satisfaction of ERDA and PMC, CE or TVA as appropriate; provided, however, that ERDA shall reimburse PMC, CE and TVA for any litigation costs, penalties or interest resulting from their compliance with any such directive.

E-12.5 PMC shall prosecute all suits which in PMC's judgment are reasonably required in order to properly carry out its responsibilities pursuant to this and the other Principal Project Agreements and will defend all suits

which in PMC's judgment it should defend. It shall notify and consult with all parties to the Principal Project Agreements in the event of any suit brought against PMC, CE or TVA. Prior to instituting litigation of any type PMC shall notify and consult with all parties to the Principal Project Agreements. Except as otherwise specifically limited in this contract, PMC may settle and compromise claims against it or claims which it has against others, in accordance with its best judgment; provided, however, that no funds provided to PMC by ERDA shall be used to prosecute, settle or compromise such claims without the express written approval of ERDA.

E-13.0 Allowable Cost Principles

E-13.1 The allowable cost of performing the work under this contract shall be the costs and expenses that are actually incurred in the performance of the contract work in accordance with its terms, that are necessary or incident thereto, and are determined to be allowable pursuant to this paragraph. The determination of the allowability of cost hereunder shall be based on: (1) Reasonableness, including the exercise of prudent business judgment, (2) consistent application of generally accepted accounting principles and practices that result in equitable charges to the contract work, and (3) recognition of all exclusions and limitations set forth in this clause or elsewhere in this contract as to types or amounts of items of cost. Allowable cost shall not include cost of any item described as unallowable in paragraph E-13.3 of this clause, except as indicated therein. Failure to mention an item of cost specifically in paragraph E-13.2 or paragraph E-13.3 shall not imply either that it is allowable or that it is unallowable.

E-13.2 Subject to the above paragraph and other provisions of this contract, the following are examples of allowable costs:

E-13.2.1 Materials, supplies, and equipment, including freight, transportation, material handling, inspection, storage, salvage, and other usual expenses incident to the procurement, use, and disposition thereof, subject to approvals required under other provisions of this contract;

E-13.2.2 Communication costs, including telephone services, local and long-distance calls, telegrams, cablegrams, radiograms, postage, and similar items;

E-13.2.3 Personnel costs and related expenses incurred in accordance with approved employee policies of PMC, TVA and CE, such as:

(i) Salaries and wages; bonuses and incentive compensation; overtime, shift differential, holiday, and other premium pay for time worked; nonwork time, including vacations, holidays, sick, funeral, military, jury, witness, and voting leave; salaries and wages to employees in their capacity as union stewards and committeemen for time spent in handling grievances, or serving on labor management (contractor) committees: Provided, however, that ERDA approval is required in each instance of total compensation to an individual PMC employee at an annual rate of \$25,000 or more. Total compensation, as used here, includes only the employee's base salary and bonus and incentive compensation payments;

(ii) Legally required contributions to old-age and survivors' insurance, unemployment compensation plans, and workmen's compensation plans (whether or not covered by insurance); voluntary or agreed-upon plans providing benefits for retirement, separation, life insurance, hospitalization, medical-surgical and unemployment (whether or not such plans are covered by insurance);

(iii) Travel (except foreign travel, which requires specific approval by ERDA on a case-by-case basis); incidental subsistence and other allowances of PMC employees, in connection with performance of work under this contract (including new employees reporting for work and transfer of employees, the transfer of their household goods and effects and the travel and subsistence of their dependents);

(iv) Employee relations, welfare, morale, etc., programs, including incentive or suggestion awards, employee counseling services, health or first aid clinics, and house or employee publications;

(v) Personnel training (except special education and training courses and research assignments calling for attendance at educational institutions which require specific approval by ERDA on a case-by-case basis), including apprenticeship training programs designed to improve efficiency and productivity of contract operations, to develop needed skills and to develop scientific and technical personnel in specialized fields required in the contract work;

(vi) Net cost of operating plantsite cafeterias, dining rooms, and canteens attributable to the performance hereunder.

E-13.2.4 Subcontracts, purchase orders and other commitments, subject to approvals required by other provisions of this contract.

E-13.2.5 Bonds and insurance provided for in this contract.

E-13.2.6 Consulting services, including legal and accounting, and related expenses, subject to approvals required by other provisions of this contract.

E-13.2.7 Litigation expenses, including reasonable counsel fees; provided, however, that expenses involving the cost of prosecuting claims against or contesting actions of the United States (other than valid claims or actions involving the indemnities provided for in paragraphs 9.2 and 9.3 or the provisions of paragraph 9.4) will be subject to the express written approval of ERDA.

E-13.2.8 Patents, purchased design, and royalty payments to the extent expressly provided for under other provisions in this contract or as approved by ERDA and preparation of invention disclosures, reports and related documents, and searching the art to the extent necessary to make such invention disclosures in accordance with the Patent provisions of this contract.

E-13.2.9 Repairs, maintenance, inspection, replacement and disposal of property and the restoration or cleanup of site and facilities.

E-13.2.10 Subscriptions to trade, business, technical, and professional periodicals.

E-13.2.11 Taxes, fees, and charges levied by public agencies which the parties are required by law to pay, except those which are expressly made unallowable under other provisions of this contract.

E-13.2.12 Utility services, including electricity, gas, water, steam, and sewerage.

E-13.2.13 [Reserved]

E-13.2.14 In view of the fact that PMC is a non-profit corporation which is not receiving any fee or management allowance for its role in management of the Project, PMC may utilize funds for and incur (and be reimbursed for) costs which would not be allowable under the Cost Principles of this Appendix E, including costs of the types described as unallowable in paragraphs E-13.3.1 through E-13.3.22, provided, however, that such costs are incurred in good faith and not more than \$250,000 each year during the term of this contract shall be available for defraying such costs incurred during that year (provided that funds provided by ERDA shall not be used).

E-13.2.15 Claims, liabilities, and expenses in connection therewith, including claims asserted against PMC by TVA and CE, sustained by PMC in the performance of this contract which are certified in writing by PMC to be just and reasonable and are accepted by ERDA as properly allowable under this paragraph E-13.2. (Actions pursuant to this paragraph remain subject to the provisions of paragraph 2.0 of this contract.)

E-13.3 The following are examples of unallowable costs:

E-13.3.1 Advertising, except (i) help-wanted advertising, and (ii) other advertising (such as costs of participation in exhibits) approved by ERDA as clearly in furtherance of work performed under the contract.

E-13.3.2 Bonuses and similar compensation under any other name, which (i) are not pursuant to an agreement between PMC and employees prior to the rendering of the services or an established plan consistently followed by PMC, (ii) are in excess of those costs which are allowable by the Internal Revenue Code and regulations thereunder, or (iii) provide total compensation to an employee in excess of reasonable compensation for the services rendered.

E-13.3.3 Commissions, bonuses, and fees (under whatever name) in connection with obtaining or negotiating for a Government contract or a modification thereto, except when paid to bona fide employees or bona fide established selling organizations maintained by PMC, TVA or CE for the purpose of obtaining Government business.

E-13.3.4 Provisions for contingency reserves; provided, however, that nothing herein shall affect paragraph 9.4 or the expenditure of funds from any of the reserves established pursuant to paragraph 2.5, to the extent such expenditures constitute allowable costs.

E-13.3.5 Contributions and donations.

E-13.3.6 Depreciation on LMFBR Demonstration Plant and assets of PMC. With respect to depreciation costs paid by PMC, CE or TVA to its subcontractors depreciation in excess of that calculated by application of methods approved for use by the Internal Revenue Service under the Internal Revenue Code of 1954, as amended, including the straight-line, declining balance (using a rate not exceeding twice the rate which would have been used had the depreciation been computed under the straight-line method), or sum-of-the-years digits method, on the basis of expected useful life, to the cost of acquisition of the related fixed assets less estimated salvage or residual value of the end of the expected useful life.

E-13.3.7 Entertainment costs, except the costs of such recreational activities for onsite employees as may be approved by ERDA.

E-13.3.8 Subject to provisions of E-12.4, fines and penalties, including assessed interest, resulting from violations of, or failure of PMC, CE or TVA to comply with, Federal, State, or local laws or regulations, except when incurred in accordance with the written approval of ERDA.

E-13.3.9 Government-furnished property, except to the extent that cash payment therefor is required pursuant to procedures of ERDA applicable to transfers of such property.

E-13.3.10 Insurance (including any provisions of a self-insurance reserve) on any person where PMC under the insurance policy is the beneficiary, directly or indirectly.

E-13.3.11 Interest, however represented, except as specified in paragraph E-12.4 or as ERDA may specifically approve.

E-13.3.12 Legal, accounting, and consulting services and related costs incurred in connection with the preparation of prospectuses, preparation and issuance of stock rights, organization or reorganization, prosecution or defense of antitrust suits, prosecution of claims against, or contesting actions of, the United States unrelated to obligations under this contract.

E-13.3.13 Losses (including litigation expenses, counsel fees, and settlements) on, or arising from the sale, exchange, or abandonment of capital assets, including investments; losses on other contracts, including any contributed portion under cost-sharing contracts; losses in connection with price reductions to and discount purchases by employees and others from any source; and losses where such losses or expenses--

(i) Are compensated for by insurance or otherwise or which would have been compensated by insurance required by law or by written direction of ERDA but which PMC failed to procure or maintain through its own fault or negligence;

(ii) Result from willful misconduct or lack of good faith on the part of any of the PMC's directors, corporate officers, or a supervising representative of PMC, as defined in paragraph E-11.6;

(iii) Represent liabilities to third persons for which PMC has expressly accepted responsibility under other terms of this contract.

E-13.3.14 Membership in trade, business, and professional organizations except as approved by ERDA.

E-13.3.15 Salary or other compensation (and expenses related thereto) of any individual employed under this contract as a consultant or in another comparable employment capacity who is an employee of another organization and concurrently performing work on a full-time annual basis for that organization under a cost-type contract with ERDA, except to the extent that cash payment therefor is required pursuant to the procedures of ERDA applicable to the borrowing of such an individual from another cost-type contractor.

E-13.3.16 First-class air travel in excess of the cost of less than first-class air accommodations, except when less than first-class accommodations are not reasonably available to meet necessary mission requirements, such as where less than first-class accommodations would:

- (i) Require circuitous routing;
- (ii) Require travel during unreasonable hours;
- (iii) Greatly increase the duration of the flight;

(iv) Result in additional costs which would offset the transportation savings; or

(v) Offer accommodations which are not reasonably adequate for the medical needs of the traveler.

E-13.3.17 Foreign travel, except as ERDA may otherwise specifically approve.

E-13.3.18 Bidding expenses and costs of proposals except as specifically agreed upon by ERDA.

E-13.3.19 Research and development costs, except as provided for elsewhere in this contract or as specifically agreed upon by ERDA.

E-13.3.20 Selling costs, except as specifically agreed upon by ERDA.

E-13.3.21 Special construction industry "funds" financed by employer contributions for such purposes as methods and materials research, public and industry relations, market development, and disaster relief, except as specifically provided elsewhere in this contract.

E-13.3.22 Costs in excess of \$250,000 per year for items covered under E-13.2.14.

E-13.4 Nothing provided in paragraphs E-13.2 or E-13.3 shall affect any obligation of ERDA or PMC to make any payment pursuant to the indemnities provided for in paragraphs 9.2 and 9.3 or pursuant to paragraph 9.4; provided, however, that nothing in this paragraph E-13.4 shall modify the provisions of said indemnities.

MODIFICATION NO. 1
TO
AT(49-18)-12

APPENDIX F

ADDITIONAL PRINCIPAL UNDERTAKINGS OF
COMMONWEALTH EDISON COMPANY
AND ADDITIONAL TERMS AND CONDITIONS
PERTAINING THERETO

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MODIFICATION NO. 1
TO
AT(49-18)-12

APPENDIX F

ADDITIONAL PRINCIPAL UNDERTAKINGS OF
COMMONWEALTH EDISON COMPANY
AND ADDITIONAL TERMS AND CONDITIONS
PERTAINING THERETO

CE shall provide to PMC, to ERDA or the integrated Project management organization established by ERDA, as appropriate, the services described in this Appendix F, all upon the terms and conditions provided herein.

F-1.0 Personnel

F-1.1 CE shall undertake to see that there are made available to PMC, at Project cost, individuals qualified to serve and/or perform, as required, the functions of General Manager, and such additional functions as PMC and CE shall agree upon from time to time. Such individuals shall be made available to serve on a full-time basis or on such reduced basis as PMC may deem desirable for the effective conduct of its affairs. Individuals made available to perform these functions shall be appropriately qualified and acceptable to PMC and may be employees of CE assigned to PMC. Should an individual made available to and accepted by PMC subsequently become unavailable for any reason (e.g., discharge by PMC, reassignment by CE if a CE employee, resignation, etc.), PMC will promptly notify CE and PMC will cooperate with CE in efforts to find a replacement.

F-1.2 CE shall cooperate with PMC and ERDA to see that there are made available to PMC, at Project cost, individuals qualified for nomination by PMC to serve in Key Positions and staff positions in the integrated Project management organization. Such individuals may be employees of CE assigned to PMC. Should an individual nominated by PMC and accepted by ERDA subsequently become unavailable for any reason, PMC will promptly notify CE and PMC and ERDA will cooperate with CE in efforts to find a replacement.

F-2.0 Other Services

In addition to the services specifically described in the other provisions of this Appendix F, CE shall:

F-2.1 perform such other services, incidental or related to the services described herein as PMC or ERDA and CE shall agree;

F-2.2 assist PMC and ERDA in Project guidance from CE's senior management at CE's expense; and

F-2.3 [Reserved]

F-3.0 Purchasing and Expediting Services

CE shall provide purchasing and expediting services as requested by PMC or ERDA, which shall include the following:

F-3.1 consultation with PMC and ERDA regarding expected procurement needs of the Project;

F-3.2 preparation of contracts, requests for proposals, and specifications of purchase;

F-3.3 evaluation of materials and sources of supply;

F-3.4 negotiation with potential suppliers regarding terms of purchase; and

F-3.5 administrative services related to contracts and purchase orders, including expediting and all necessary records retention and clerical services attendant thereto.

F-4.0 Guidelines for Purchasing and Expediting Services

The following guidelines will apply to the purchasing and expediting services to be provided by CE to PMC or ERDA under this Appendix F, and may be changed from time to time upon agreement of PMC or ERDA and CE.

F-4.1 Routine purchasing services principally will be furnished by CE's internal purchasing personnel and facilities. Where required by PMC or ERDA and agreed to by TVA and CE, supplemental assistance will be provided by TVA. CE will not be responsible for more complex negotiated procurement, except as agreed with PMC or ERDA. CE and TVA will consult with PMC and ERDA with respect to assessing the quantity, type, and placement of responsibility for effecting such procurements.

F-4.2 It is expected that contractual arrangements will provide for approval and access to quality assurance information as well as other required flow-down provisions.

F-4.3 Contractual arrangements, payments thereunder and records pertaining thereto, will be subject to audit by ERDA, GAO, and other appropriate government authority.

F-4.4 Procurement will be effected in the manner most advantageous to the Project, taking into account price, quality, delivery, and other relevant factors. In order to assure this objective and the award of business on an impartial basis, procurement shall be effected by methods calculated to assure as full and free competition as is consistent with securing the required supplies and services.

F-5.0 Administration

F-5.1 No contracts or purchase orders shall be executed in the name of CE. In no event shall CE be deemed to be the purchaser of any services or materials which it procures on behalf of the Project.

F-5.2 In order to afford desirable flexibility, purchasing procedures for PMC will substantially conform to CE's purchasing procedures on file with the Federal Power Commission, modified so as to meet applicable mandatory Federal requirements as required by this contract; provided that CE shall use methods, practices and procedures, including providing contractual provisions for quality assurance measures in subcontracts and purchase orders, which are acceptable to PMC or ERDA and CE. CE will furnish copies of a Procurement Manual to PMC and ERDA, establishing methods, practices and procedures to be followed in performing its procurement services under this Appendix F which Procurement Manual, and any revisions thereof, shall be subject to the approval of PMC, ERDA and CE.

F-5.3 The management of all contractual arrangements entered into, issued or made by PMC or ERDA, pursuant to services performed by CE under this Appendix F shall, during the period of the contract, remain in PMC or ERDA.

F-5.4 CE shall, when requested by PMC or ERDA, and may, but only when authorized by PMC or ERDA, enter into subcontracts for the performance of any part of the work or services under this Appendix F.

F-5.5 Ceilings may be imposed upon the annual costs which CE may incur pursuant to this contract, which ceilings may be adjusted from time to time in accordance with Project budgets. CE will keep PMC and ERDA informed concerning the adequacy of budgeted funds and will notify PMC and ERDA whenever in CE's judgment funds are or soon will be insufficient. When such conditions exist, CE shall be excused from performance under this contract until sufficient funds become available.

F-6.0 Payment

F-6.1 Subject to paragraph F-6.2 ERDA will reimburse CE for all direct and indirect expenses incurred by CE in connection with Project Activities.

F-6.2 From and after the Effective Date CE shall continue to credit ratably until July 31, 1983, or the date of termination, whichever occurs first, against ERDA's obligation for payment of costs for the performance of work and services under this contract, a contribution credit (hereinafter called "contribution credit") of \$2,000,000 less the aggregate amount of certain costs incurred by CE from January 13, 1972 to July 31, 1973, in connection with preparation for and in furtherance of Project Activities, which costs have been determined not to be "allowable Project costs". In this respect, \$_____ shall be credited each month against invoices submitted to ERDA by CE pursuant to this Appendix F. To the extent the contribution credit in any given month exceeds the amount of the invoice or invoices submitted to ERDA by CE in that month, the unapplied balance of the contribution credit for that month shall be carried forward to the next month.

F-6.3 Once each month (or at more frequent intervals, if approved by ERDA) CE may submit to ERDA, in such form and reasonable detail as ERDA may require, an invoice supported by a statement of cost (determined in accordance with generally accepted accounting principles) incurred by CE in the performance of work and services under this contract. Such invoice or voucher shall also set forth the amount of any credit to which ERDA may be entitled, including any contribution credit then allowable to ERDA pursuant to paragraph F-6.2, and the net amount claimed to be due and owing to CE after deduction of any such credit.

F-6.4 Claims for payment shall be accompanied by such supporting documents and justifications as ERDA shall prescribe.

MODIFICATION NO. 1CHANGE FROM ORIGINAL CONTRACTIndex adds:Part IParagraph 1.1.16 - 1.1.19
of Definitions

- 1.1.16 - This Contract (old 1.1.14)
- 1.1.17 - ERDA
- 1.1.18 - Reference Design
- 1.1.19 - Effective Date

Paragraph 10.0 - changes title to:
"Ownership and/or Disposition of
LMFBR Demonstration Plant Upon
Expiration or Termination"

Part II (new)

Defines effective date and transfers
all property to ERDA.

New "Whereas Clauses"

Replaces AEC with ERDA and recognizes
parties are ready to move the project
forward to completion.

Further the clauses recognize the
increased cost and the fact that the
concept of unified management permitting
ERDA (AEC) to be on the Board of Directors
was not approved by Congress. In light
of these two factors the arrangement
established by Modification No. 1
(Integrated Management Office) by which
the project will be managed is well suited
to carry the project forward and preserve
the rights of the utility industry to
information and to royalty free use of
invention and data together with the right
to assign qualified personnel to participate
in the project.

Changes to original "Whereas Clauses"

Uses the date of 1983 for successful
demonstration of the LMFBR in lieu of 1980
in recognition of the delays that have
occurred.

2

Replaces AEC with ERDA.

Gives ERDA the responsibility for managing and carrying out the project consistent with Principal Project Objectives and to design and build the Plant substantially in conformance with the Reference Design (hereinafter defined).

a) Deletes PMC as responsible to produce a successful Demonstration Plant and gives ERDA the responsibility with the assistance of the other parties.

b) Authorizes the entering into the contract pursuant to P.L. 91-273 as amended.

Definition 1.1.14 - "This Contract"

Reserved as it is defined in 1.1.16.

Definition 1.1.15

Not used.

Definition 1.1.16

Incorporates Modification No. 1 into the definition of the contract.

Definition 1.1.17

Defines ERDA.

Definition 1.1.18

Defines Reference Design as portions of the PSAR dockated by NRC on June 13, 1975.

Definition 1.1.19

Refer to effective date which is defined in Part II.

2.0 Principal Undertakings of PMC and Other General Matters

In original contract PMC was authorized to manage the project, now PMC is to administer the interests of the utility industry. This administration includes the right and duty of PMC to 1) continuously monitor, 2) prepare and disseminate Project information, 3) arrange for the participation of utility personnel in the project, 4) invest and disburse funds received from BRC, 5) exercise the rights provided in the contract designed to protect the utility's interest in the project including PMC's rights to a) approve any proposed major change in scope or deviation from the Reference Design; b) of access to information and data either in the possession of ERDA or any of the Project contractor;

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c) counsel with ERDA and the Project contractor concerning Project matters;
 d) to see that the conditions to the disbursement of funds received from BRC have been fulfilled; and e) to implement the provisions of the paragraph (11) dealing with termination if in PMC's judgment, a termination criterion exists.

Deletes the AEC endeavor to secure legislation to permit two of its officials or employees to serve on the PMC Board of Directors. Also deletes AEC endeavor to obtain legislation to permit up to five AEC employees to serve on PMC staff.

The function of the Project Steering Committee has been changed from implementing management of the project and administering the Principal Project Agreements to a role of a tripartite review mechanism and to identify Key Positions within the Integrated Project Management Organization to be filled by PMC and utility personnel.

2.3.1 Replaces AEC with ERDA.

2.3.2 Changes the requirement for all significant Projects matter to be brought before PSC for decision to review.
 Eliminates lead roles of the parties.

2.3.3 With the change in role of PSC eliminates final decision by PSC and the resulting appeal mechanism if one was required.

2.3.4 Reserved. This formerly provided for PSC to keep the PMC Board informed and to consult with the Board on significant Project actions.

2.3.5 Eliminates resolution of referred matters by the PMC Board but keeps the right of ERDA or any Board member to refer a matter to the heads of ERDA, CE and TVA for their unanimous resolution which shall be binding on all parties. If the heads are unable to reach a unanimous resolution the Administrator of ERDA shall decide the matter consistent with the Principal Project Objectives and the contractual rights and obligations of the parties. While a matter

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in question is being resolved ERDA may proceed with the Project.

Formerly the Commission as a body, could only make final resolution where the matter under consideration would significantly affect previously agreed upon overall Project cost estimates or where the matter is of such a nature to significantly affect continuance of the Project.

2.3.6 Reserved - formerly required AEC to act promptly on matters referred to it and contained rights for disputing parties to consult with the Commission and provide that the AEC decision shall accord with the rights and obligations of the parties.

2.4 No change.

2.4.1 No change.

2.4.2 Reserved - formerly required PMC to solicit proposals, negotiate and enter into contracts with Reactor Manufacturers.

2.4.3 Reserved - formerly provided for PMC to solicit proposals, negotiate and enter into contracts for A-E and construction services and equipment.

2.4.4 No change - provides for PMC assistance in application for permits, licenses or other authorizations.

2.4.5 Changed to eliminate ability of PMC to borrow funds using utility contribution agreements as security.

2.4.5.1 - New - provides for PMC to prepare a budget and work plans for all money it is to receive and disburse, only allowable costs are to be included as disbursements. ERDA and PMC may agree to amendments.

ERDA and PMC shall agree on the budget and work plans and amounts to be reimbursed. Any disagreements are to be resolved in accordance with 2.3.5 (see above appeal to Heads, etc.).

2.4.5.2 PMC shall receive and disburse Project funds in accordance with approved budgets and work plans.

2.4.5.3 ERDA shall advance or reimburse PMC amounts sufficient to cover any approved budget excess of disbursements over anticipated and available funds.

2.4.5.4 Recognizes PMC's right to invest utility funds not required to meet obligations.

2.4.6 Changes provision for PMC to budget for the project and to advise all parties should it appear that resources are insufficient. It now provides for PMC review of ERDA's Project budget against which PMC will reimburse ERDA in an annual amount not to exceed the lesser of:

- 1) total funds available to PMC (less certain reserves), or
- 2) 50% of the ERDA budget.

2.4.7 Eliminates PMC management of the Project and now provide for PMC to disburse funds to ERDA upon appropriate showing of work accomplished or costs incurred.

2.4.8 Eliminates requirement of PMC to conduct all Project Activities in accordance with laws and now provides for PMC to review and approve any proposed changes in Project scope or proposed deviations from the Reference Design, with disputes to follow the provisions of paragraph 2.3.5 provided that no decision of the Administrator of ERDA with respect to proposed major deviation (see 4.0 for definition of "Major Changes") from the Reference Design shall affect the right of PMC to make a determination that it does not agree with a decision of the Administrator of ERDA which then becomes a Project Termination criterion.

2.5 Moves the provision for all parties to submit to each other information respecting their activities as reasonably requested to paragraph 2.6 and this paragraph now provides for PMC to establish reserves from utility funds for:

- a) reasonable operating costs
- b) claims and liabilities, and
- c) wind up costs.

2.6 Formerly was 2.5.

2.7 Formerly was 2.6.

2.8 Reserved.

NOTE: Former 2.7 which provided for PMC to be responsible for maintaining satisfactory standards of employee competency, conduct and integrity and to be responsible for taking such disciplinary action was not used in this Modification as ERDA is now responsible.

2.9 Renumbering of 2.8. Provides for PMC to require all its high level personnel who perform work under this contract to disclose all consultant or other services which the employee proposes to undertake.

2.10 Formerly 2.9 dealing with Subcontracts, Purchase Orders and Other Lower Tier Commitments. New contract eliminates clause to be inserted in subcontracts requiring contractor to look solely to PMC for payment.

2.11 Formerly 2.10. Now provides that PMC's determination of "a major change" is not subject to the referral mechanism of paragraph 2.3.5.

3.0 Provides for TVA and ERDA to enter into an Operating Agreement to be concurred in by PMC; otherwise unchanged.

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4.0 Provides for ERDA to manage the Project and to establish an integrated Project Management Organization composed of PMC, utility and government personnel under ERDA direction. Requires ERDA to keep PMC fully and currently informed. PMC, CE and TVA have right of access to data pertaining to major project contracting.

Eliminates so called "Hosmer Amendment" funds as authorization requested includes, as one line, all project funds required.

Provides for ERDA to assume responsibility for supervision and administration of contracts with the Reactor Manufacturers and AE's except as otherwise agreed with PMC.

Provides for ERDA to own the plant subject to TVA's right to purchase the plant.

Provides for ERDA to inform PMC through PSC of all proposed major changes in Project scope or major deviations from the Reference Design with major change defined as any change which reasonably might be expected to:

- 1) increase or decrease then current estimated Project costs by more than \$25,000,000 or more, or
- 2) increase or decrease Project schedule by 1 year or more, or
- 3) otherwise significantly affect the probability of achieving any of the Principal Project Objectives.

Gives ERDA right to organize and revise from time to time the integrated Project Management Organization. ERDA has the right to approve or reject PMC and utility personnel nominated to fill Key Positions providing ERDA consults with PMC.

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If ERDA revises the organization PSC can reidentify Key Positions if the revision affects Key Positions.

ERDA is to make available a reasonable number of staff positions to be filled by PMC and utility personnel.

ERDA has the right to terminate an individuals assignment for cause after consulting with PMC. In the event of disagreement the matter will be referred to PSC for review with unresolved issues to follow the provisions of 2.3.5.

5.0 No substantive change except substitute ERDA for AEC or WRC where appropriate.

6.0 No change except use of ERDA.

7.0 Eliminates loan as resource; eliminates "Hosmer Amendment" funds as a resource; eliminates ERDA funding by letter of credit; adds ERDA.

8.0 No substantive change except use of ERDA.

9.0 No substantive change except substitution of ERDA and change in title of PMC's Assistant General Manager of Business and Finance to Comptroller.

10.0 Updates paragraph in line with P.L. 93-276 authorizing AEC (now ERDA) to own the plant; eliminates provisions for TVA to complete construction of the facility; and provides for TVA to provide ERDA with an appropriate document transferring custody of the site to ERDA.

11.0 Adds termination provision regarding "major changes" referred to in 2.4.8 if PMC does not agree with a decision of the Administrator of ERDA.

Eliminates provision providing for: in the event of termination for 1/2 of costs to be allocated to AEC with the other 1/2 to utility funds. If AEC spent more than 1/2 (up to \$92 million) it was to get a refund if necessary. Utility contribution would continue to be paid until they equalled 1/2 up to approximately \$250 million.

Now provides for payments under Utility Contribution Agreements to stop following termination.

Eliminates provisions for ERDA to secure necessary legislative authority permitting factual issues on termination criteria to be submitted to the American Arbitration Association.

12.0 No change except use of ERDA.

Part II - New - Provides for effective date to be when ERDA has authority to execute this modification, and PNC has received a current determination from Internal Revenue Service stating that the agreement will not adversely affect the tax exempt status of PNC and when the Reactor Manufacturer (Westinghouse) and the A-E (Burns & Roe) have been assigned to ERDA.

Finally it calls for return of any unexpended ERDA funds and the transfer of title of property to ERDA.

Appendix A - No change.

Appendix B - Eliminated.

Appendix C - Substitutes ERDA for AEC; updates Listing of Employment Openings in line with the most recent Federal Procurement Regulation (FPR) (adds Vietnam veterans). Updates Convict Labor provision in line with most recent FPR.

Updates Cost Accounting Standards in line with the most recent FPR. Eliminates Price-Certification provision in line with FPR.

Appendix D - Substitutes ERDA for AEC & PMC.

Changes provision for TVA to license use of site to PMC to provide for transfer of custody of the site to ERDA.

Updates provision relating to TVA's \$2,000,000 contribution (in addition to its Utility Contribution to BRC) to bring it in line with what has been credited to date.

Requires ERDA & TVA to agree on an annual TVA budget.

Eliminates requirement for TVA to recruit certain PMC key officials in line with the ERDA takeover.

Adds a new provision providing for a separate TVA-ERDA operating agreement (to be negotiated), which agreement will incorporate terms and conditions substantially as set forth in the former appendix provision relating to Quality Assurance, Plant Operating and Maintenance and Licensing.

Appendix E - Changes AEC to ERDA; eliminates reference to use of Utility Contribution Agreements as collateral security for loans.

Changes Property provision to eliminate TVA ownership of the Plant and eliminates reference to Hosmer Amendment provided equipment. The provision is now similar to the ERDA Procurement Regulations "Property" article.

The Bonds, Insurance, Taxes, Litigation and Claims provision has been modified to provide that no ERDA funds shall be used by PMC to prosecute, settle or compromise claims without the express written approval of ERDA.

The Allowable Cost Principles provision has been modified to substitute ERDA approval for PSC. The reference to interest on PMC loans as being allowable has been removed in line with elimination of the right of PMC to borrow.

II

Provides that the unallowability of contingency reserves has no application to expenditures from reserves established by PMC for operating costs, claims costs and close out costs.

Appendix F - Replaces AEC and/or PMC with ERDA.

Provides for CE to cooperate with ERDA and PMC to make available qualified individuals for nomination for key positions.

Updates Payment provision relating to CE's \$2,000,000 contribution (in addition to its Utility Contribution Agreement to BRC) to take into account costs which have previously been credited.

Agreement between PMC and BRC.

PMC-BRC Modification substitutes ERDA for AEC.

Deletes provision relating to continuation of utility contribution until they equalled 1/2 of Project Costs following termination and provides that no utility shall have an obligation to make a payment which becomes due at any time following the date of termination.

Deletes reference to PMC carrying out the Project.

Deletes use of utility contribution Agreements for use as security or collateral.

Agreement AEC (ERDA) and BRC.

Substitute ERDA for AEC.

February 1975

AMENDED STATUTORY CRITERIA FOR FOURTH ROUND ARRANGEMENTS UNDER
THE COMMISSION'S ENERGY RESEARCH AND DEVELOPMENT
ADMINISTRATION'S POWER REACTOR DEMONSTRATION PROGRAM (February, 1975)

1. Eligible Proposals

Proposals may be submitted by reactor manufacturers who are associated with a utility or group of utilities. The proposer and associated utility or group of utilities must be in the United States, its territories and possessions, Puerto Rico or the Canal Zone. The utilities may be investor-owned, cooperatively owned or publicly owned electric utilities. The proposer may have other associates, including Architect-Engineers.

2. Program Objectives

The program has as its major objectives the demonstration of the technology pertaining to, and the reliability, safety, and economics of, Liquid Metal Fast Breeder Reactor power plants in the utility environment. Other ~~AEC~~ ERDA purposes are:

(a) To provide for meaningful identification of areas requiring emphasis in the LMFBR research and development program.

(b) To the extent practicable, to validate technical and economic data and information pertinent to the total LMFBR program.

(c) To assist in the development of an adequate industrial base.

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(d) To provide for ~~maximum~~ meaningful utility participation and experience in LMFBR plant development, acquisition and operation.

(e) To help assure overall program success.

(f) To demonstrate and maintain U.S. technological leadership.

3. Two-Phase Approach

a. Project Definition Phase Contract--This will be the only means for reactor manufacturers and utilities to become eligible for participation in a definitive cooperative arrangement for the development, design, construction, test operation, and operation of an LMFBR demonstration plant. The essential purpose of the first-phase contracts will be to help assure that a sufficiently well identified and realistically assessed basis exists for a definitive cooperative arrangement. AEC will carefully consider responsive proposals and will select as the basis for negotiation those proposals which it determines most desirable. Each of the selected reactor manufacturers, with the participation of its utility and other associates, will conduct the Project Definition Phase to perform any necessary design and analyses and develop further various aspects of the contemplated demonstration plant, including: (i) the magnitude of the technical and economic risks associated with the proposed plant design; (ii) investigation of alternate sites so as to help insure meeting siting criteria, to help minimize the financial and technical risks and to help obtain

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regulatory approvals; (iii) the supporting research and development, component development, and prooftesting that will be required; (iv) trade-off studies constituting the basis for design decisions; (v) identification of codes and standards required for the second phase; (vi) site and safety analyses, and (vii) technical coupling between the project and the ongoing and planned development programs. The details of the scope of this portion of the Project Definition Phase, and the extent of the Commission's reimbursement for the performance of this work, will be negotiated by AEC and the selected proposers and specified in each contract. Each contract will also call for further identification of: (i) capabilities and resources of the contractor and of members or contemplated members of the demonstration plant team; (ii) project organization; (iii) top management participation; (iv) the extent and type of AEC assistance required and extent of assistance by others; and (v) training requirements. Such items would be carried out at no cost to AEC. Fees will not be paid by the AEC for work under the first-phase contracts.

Each contract will require utility association at the outset and will specify that continuing utility association will be necessary during the term of the contract; utility association will be a prerequisite for a definitive cooperative arrangement. The term

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of each first-phase contract will be the subject of mutual agreement during the negotiations. In any event, AEC would reserve the right to terminate for its convenience, and each contract would provide for possible extension upon mutual agreement of the contracting parties. If and when a contractor or contractors and AEC mutually conclude that the results of a pertinent Project Definition Phase contract or contracts indicate that a sufficiently well identified and realistically assessed basis exists for a definitive cooperative arrangement, and the AEC concludes that budgetary and other considerations warrant, the contracts will permit the AEC to call for a proposal package from the reactor manufacturer-utility team or teams. Thus, proposals for a definitive cooperative arrangement may be submitted only by those Project Definition Phase contractors whose proposals are specifically sought by AEC.

b. Definitive Arrangements--Based on such proposal or proposals called for by AEC, negotiations will be undertaken only with such proposing reactor manufacturer-utility team or teams looking toward a mutually agreeable definitive contract or contracts for the development, design, construction, test operation and operation of an LMFBR demonstration plant. The details of a resulting contract, including those respecting ~~AEC's assistance~~ ERDA's participation (including appropriate negotiated fees), need not be identical to

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those initially projected by the reactor manufacturer and associates in its original proposal or to those in the proposal package submitted subsequently by the reactor manufacturer-utility team. Should the LMFBR demonstration plant program eventually involve more than one demonstration plant, ~~AEC~~ ERDA does not expect to enter into more than one definitive arrangement involving the same reactor manufacturer.

4. Design requirements and plant objectives

(a) The design shall be for a central station, sodium-cooled, fast breeder nuclear plant of about 300 to 500 MWe capacity, reasonably practicable for scale-up to a commercial plant. The first core of the plant shall use a fuel consisting of mixed oxide of uranium and plutonium.

(b) The primary objectives of the plant are to operate safely, reliably, and with a high plant factor. These, plus the objectives of plant inspectability and maintainability, should be kept foremost in mind during the design of the plant.

(c) The design should require a minimum of component or system development, make maximum use of existing technology and facilities, and be consistent with the nature of the ongoing LMFBR R&D program; however, consideration should be given to the accommodation of future improvements in the technology which may be anticipated.

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(d) The plant shall include sufficient instrumentation to demonstrate the design performance of all important plant components and systems, as well as to aid in special testing and in the prediction and diagnosis of any abnormal performance characteristics of a component or system.

(e) The inclusion of this instrumentation as well as the provision in (c) above should not compromise the primary objective that the plant operates reliably and safely.

(f) The plant should demonstrate the key technological design features and economic aspects which will contribute in as direct a manner as possible to the development, application and acceptance of future commercial plants on a utility system.

(g) The design shall be for a central station plant of the type and size described in (a), ~~at a suitable site~~ requiring no unusual design features or special considerations in licensing because of unfavorable local conditions, i.e., hydrology, seismology, meteorology, etc.

(h) The plant shall be designed, fabricated, constructed, tested, operated and maintained in conformance with established engineering standards and also with high quality assurance practices.

Systematic disciplined means of assuring application of these standards and practices shall be utilized and documented (in such

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form as to be available for use by others). These means will include quality assurance, engineering reviews, and sufficient proof testing to establish a high level of confidence in the operational performance of plant components.

5. Prerequisites for Acceptance of Proposals

In order to be considered, the proposals should satisfy the following conditions:

(a) Meet the requirements indicated in paragraph 1. above.

(b) Accept in principle the objectives and requirements stated in the Invitation for Proposals, as it may be amended.

(c) Demonstrate to the satisfaction of AEC the technical and financial competence and integrity of the proposer and principal associates.

(d) Evidence that the reactor manufacturer has designed and participated in the construction and operation of at least one central station nuclear power plant, and that there is a strong management commitment (evidenced by corporate expenditures and actions) to become an established supplier of LMFBR plants.

(e) Evidence that the reactor manufacturer is associated with a utility or group of utilities for participation under the Project Definition Phase contract with a view towards a firm commitment for a definitive cooperative arrangement.

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(f) Evidence the capability of the proposing team to arrive at a sufficiently well identified and realistically assessed basis for a definitive cooperative arrangement within a reasonable period of time.

(g) Supply the information required by the Invitation for Proposals, as it may be amended.

6. Possible ~~AEC assistance~~ ERDA Participation

The ~~Commission~~ ERDA desires to secure accomplishment of the demonstration plant program at minimum cost consistent with its other program objectives. ~~Maximum~~ Meaningful industrial and utility participation is desired. The ~~Commission~~ ERDA will consider ~~requests to provide financial assistance~~ participating, as part of a definitive cooperative arrangement, in one or more of the following areas:

(a) Research and development, including testing, development and applications of codes and standards, quality control programs, ~~special~~ components and instrumentation, ~~or special~~ testing and operational expenses ~~not normally~~ required for commercial operation, and the conduct of such activities in ~~AEC's~~ ERDA's facilities when appropriate;

(b) Engineering, procurement, installation and prooftesting of ~~first of a kind~~ components, ~~first of a kind~~ equipment (including maintenance equipment) and special instrumentation; and construction of buildings and related facilities;

(c) Design and related work (Titles I, II and III and other engineering services ~~such as~~ including but not limited to vendor engineering,

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expediting, quality assurance, and system check-out and testing);

(d) Fuel fabrication;

(e) Training;

(f) Start-up and related work, ~~over and above~~ including R&D necessary to place the ~~nuclear steam supply system~~ plant in condition ready for full scale operation, operation and maintenance, and periodic tests and inspection during the period of the definitive ~~cooperative~~ arrangement; and

(g) Furnishing special nuclear materials or an entire core(s), for stated periods, under an arrangement whereby ~~AEC~~ ERDA assumes part or all of the costs; and

(h) Integration of ERDA, Contractor, and utility personnel into a single Project staff, as deemed appropriate in the best interests of the Project with supervision on a disciplinary basis without regard to the organizational affiliation of particular individuals or supervisors.

7. ~~Commission~~ ERDA action on proposals

The ~~Commission~~ ERDA reserves the right, without qualification, to select any proposal(s) as the basis for negotiation, to reject all proposals, and to exercise its discretion and apply its judgment with respect to any aspect of any proposal.

8. ~~Addenda~~ Changes or supplements

No changes or supplements to these criteria shall be made without the prior submission to and approval by the JCAE.

CONTRACT NO. AT(49-18)-14

CONTRACT
BETWEEN
UNITED STATES OF AMERICA
AS REPRESENTED BY
THE UNITED STATES ATOMIC ENERGY COMMISSION
AND
BREEDER REACTOR CORPORATION

CONTRACT NO. AT(49-18)- 14

CONTRACT
BETWEEN
UNITED STATES OF AMERICA
AS REPRESENTED BY
THE UNITED STATES ATOMIC ENERGY COMMISSION
AND
BREEDER REACTOR CORPORATION

This Contract is entered into by and between the United States of America (hereinafter referred to as "Government"), as represented by the United States Atomic Energy Commission (hereinafter referred to as "Commission" or "AEC"), and Breeder Reactor Corporation (hereinafter referred to as "BRC"), a nonprofit corporation organized and existing under the laws of the District of Columbia.

This Contract is entered into contemporaneously with the execution of Contract No. AT(49-18)-12 (hereinafter referred to as the "AEC Agreement") among the AEC, Tennessee Valley Authority (TVA), Commonwealth Edison Company (CE) and Project Management Corporation (PMC), and the contract between PMC and BRC described in paragraph I, below (hereinafter referred to as the "PMC-BRC Contract").

The parties hereto agree as follows:

I. BRC agrees that it will carry out its undertakings under the AEC Agreement and the PMC-BRC Contract which provides, inter alia, for the collection and remission of funds contributed to the LMFBR Demonstration Project (hereinafter referred to as "Project") by the utility industry.

II. BRC shall give the AEC reasonable notice of, and the opportunity to attend, its Directors' meetings as an observer, and shall otherwise keep the AEC generally informed of its activities with relation to the Project.

III. BRC shall afford the AEC reasonable opportunities to consult with BRC upon AEC's request.

IV. BRC represents that this Contract, the PMC-BRC Contract, and the utility agreements referenced therein to which BRC is a party, constitute all of the major commitments made directly by BRC in relation to the Project, except for representations to the Internal Revenue Service and the Securities and Exchange Commission, in connection with applications for tax and securities rulings, and the articles of incorporation and bylaws of PMC and BRC.

3 CONTRACT NO. AT(49-18)-14

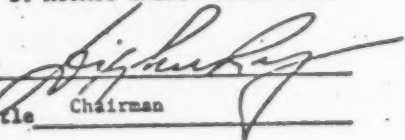
V. BRC shall not cause nor permit the PMC-BRC Contract or any Contribution Agreement to be amended or modified during the Project term, without the prior written approval of the AEC. There will be no rights of termination of the Project other than those set forth in paragraph 11.0 of the AEC Agreement which are incorporated herein by reference.

VI. This Contract and the PMC-BRC Contract shall be construed to be consistent with the provisions of the AEC Agreement, and AEC's rights and obligations as provided for in the said AEC Agreement shall not be subject to construction in the light of the provisions of any agreement between or among any of the Project participants with respect to the Project to which the AEC is not a direct contracting party.

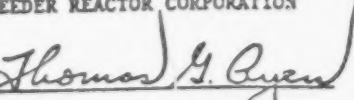
VII. In addition to the foregoing, the General Terms and Conditions set forth in Appendix A attached hereto shall be applicable to this Contract.

IN WITNESS WHEREOF, the parties have executed this Contract, the
25th day of July 1973.

U. S. ATOMIC ENERGY COMMISSION

By Title Chairman

BREEDER REACTOR CORPORATION

By Title Chairman of the Board

CONTRACT NO. AT(49-18)-14

I, R. P. Bachert, certify that I am
Treasurer and Assistant Secretary of Breeder Reactor Corporation,
identified as a party herein; that Thomas G. Ayers
who signed this Contract on behalf of Breeder Reactor Corporation was
then Chairman of the Board of said corporation; that said
contract was duly signed for and on behalf of said corporation by
authority of its governing body and is within the scope of its corporate
powers.

In Witness Whereof, I have hereunto affixed my hand and the seal
of said corporation this 25th day of July, 1973.

(Seal)

R. P. Bachert

APPENDIX A TO
CONTRACT AT(49-18)-14

GENERAL TERMS AND CONDITIONS

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GENERAL TERMS AND CONDITIONS

1. Covenant Against Contingent Fees

BRC warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by BRC for the purpose of securing business. For breach or violation of this warranty the U.S. Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

2. Officials Not to Benefit

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

3. Assignment; Subcontracting

Neither this contract nor any interest therein nor claim thereunder shall be assigned or transferred or subcontracted by BRC, except as may be expressly agreed to in writing by the Atomic Energy Commission.

4. Equal Opportunity

(The following clause is applicable unless this contract is exempt under the rules, regulations, and relevant orders of the Secretary of Labor (41 CFR, ch. 60).)

During the performance of this contract, BRC agrees as follows:

A. BRC will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. BRC will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. BRC agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by AEC setting forth the provisions of this Equal Opportunity clause.

APPENDIX A TO
CONTRACT AT(49-18)-14

B. BRC will, in all solicitations or advertisements for employees placed by or on behalf of BRC, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

C. BRC will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by AEC, advising the labor union or workers' representative of BRC's commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. BRC will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

E. BRC will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by AEC and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

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CONTRACT AT(49-18)-14

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F. In the event of BRC's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in part and BRC may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

G. BRC will include the provisions of paragraphs A through C in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. BRC will take such action with respect to any subcontract or purchase order as AEC may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event BRC becomes involved in, or threatened with, litigation with a subcontractor or vendor as a result of such direction by AEC, BRC may request the United States to enter into such litigation to protect the interests of the United States.

5. Examination of Records by Comptroller General

A. BRC agrees that the AEC and the Comptroller General of the United States or any of their duly authorized representatives shall, until the expiration of 3 years after final payment under this contract or such lesser time specified in the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of BRC involving transactions related to this contract.

B. BRC further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under the subcontract or such lesser time specified in the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (1) purchase orders not exceeding \$2,500 and (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

APPENDIX A TO
CONTRACT AT(49-18)-14

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C. The periods of access and examination described in A and B above, for records which relate to (1) litigation or the settlement of claims arising out of the performance of this contract, or (2) costs and expenses of this contract as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims, or exceptions have been disposed of.

D. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

MODIFICATION NO. 1
TO
CONTRACT NO. AT(49-18)-14

MODIFICATION NO. 1
TO
CONTRACT
BETWEEN
UNITED STATES OF AMERICA
AS REPRESENTED BY
THE UNITED STATES ATOMIC ENERGY COMMISSION
AND
BREEDER REACTOR CORPORATION

MODIFICATION NO. 1
TO
AT (49-18)-14

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APPENDIX

A General Terms and Conditions

MODIFICATION NO. 1
TO
AT (49-18)-14

MODIFICATION NO. 1

TO

CONTRACT BETWEEN

UNITED STATES OF AMERICA

AS REPRESENTED BY

THE UNITED STATES ATOMIC ENERGY COMMISSION

AND

BREEDER REACTOR CORPORATION

This Modification No. 1 is entered into by and between the United States of America (hereinafter "Government") as represented by the United States Energy Research and Development Administration (hereinafter "ERDA"), and Breeder Reactor Corporation (hereinafter "BRC").

WHEREAS the Government, as represented by the United States Atomic Energy Commission and BRC heretofore have entered into Contract No. AT (49-18)-14, effective as of July 25, 1973 relative to a cooperative arrangement among the United States Atomic Energy Commission (hereinafter "AEC"), Tennessee Valley Authority (hereinafter "TVA"), Commonwealth Edison Company (hereinafter "CE"), Project Management Corporation (hereinafter "PMC") and BRC for effecting the design, development, construction, testing and operation on an electric utility system of a Liquid Metal Fast Breeder Reactor (LMFBR) power plant, as contemplated by Section 106 of Public Law 91-273, as amended (hereinafter the "Project");

AND WHEREAS, under a recent Government reorganization, the United States Energy Research and Development Administration (hereinafter "ERDA"), has succeeded to the nuclear energy development functions formerly vested in AEC;

AND WHEREAS, ERDA, TVA, CE and PMC are entering contemporaneously into Modification No. 1 to Contract No. AT (49-18)-12 governing the arrangements by which the Project will be managed;

AND WHEREAS, the parties hereto believe that said Modification No. 1 to Contract No. AT (49-18)-12 renders appropriate certain modifications in Contract No. AT (49-18)-14 heretofore entered into by them.

NOW, THEREFORE, IN CONSIDERATION of the foregoing and of the promises hereinafter set forth, the parties hereto agree that Contract No. AT (49-18)-14 shall be modified in its entirety by substituting therefor the Agreement set forth below in Part I of this Modification No. 1. Such Agreement between the parties, as set forth in Part I below, shall become effective on the Effective Date, as defined in Part II of this Modification No. 1.

PART I
AGREEMENT
BETWEEN
UNITED STATES OF AMERICA
AS REPRESENTED BY
THE UNITED STATES ENERGY RESEARCH
AND DEVELOPMENT ADMINISTRATION
AND
BREEDER REACTOR CORPORATION

This Agreement is entered into by and between the United States of America (hereinafter referred to as "Government"), as represented by the United States Energy Research and Development Administration (hereinafter "ERDA"), and Breeder Reactor Corporation (hereinafter "BRC"), a nonprofit corporation organized and existing under the laws of the District of Columbia, shall be effective on the Effective Date, as defined in Part II of this Modification No. 1.

This Agreement is entered into contemporaneously with the execution of Modification No. 1 to Contract No. AT (49-18)-12 (hereinafter referred to as the "ERDA Agreement") among ERDA, Tennessee Valley Authority (TVA), Commonwealth Edison Company (CE) and Project Management Corporation (PMC), and Modification No. 1 to the contract between PMC and BRC described in paragraph I. below (hereinafter the "PMC-BRC Contract").

The parties hereto agree as follows:

I. BRC agrees that it will carry out its undertakings under the ERDA Agreement and the PMC-BRC Contract which provides, inter alia, for the collection and remission of funds contributed to the Project by the utility industry.

II. BRC shall give ERDA reasonable notice of, and the opportunity to attend, its Directors' meetings as an observer, and shall otherwise keep ERDA generally informed of its activities with relation to the Project.

III. BRC shall afford ERDA reasonable opportunities to consult with BRC upon ERDA's request.

IV. BRC represents that this Agreement, the PMC-BRC Contract, and the utility agreements referenced therein to which BRC is a party, constitute all of the major commitments made directly by BRC in relation to the Project, except for representations to the Internal Revenue Service and the Securities and Exchange Commission, in connection with applications for tax and securities rulings, and the Articles of Incorporation and Bylaws of PMC and BRC.

V. BRC shall not cause nor permit the PMC-BRC Contract or any Contribution Agreement to be amended or modified during the Project term, without the prior written approval of ERDA. There will be no rights of termination of the Project other than those set forth in paragraph 11.0 of the ERDA Agreement which are incorporated herein by reference.

VI. This Agreement and the PMC-BRC Contract shall be construed to be consistent with the provisions of the ERDA Agreement, and ERDA's rights and obligations as provided for in the said ERDA Agreement shall not be subject to construction in the light of the provisions of any agreement between or among any of the Project participants with respect to the Project to which ERDA is not a direct contracting party.

VII. In addition to the foregoing, the General Terms and Conditions set forth in Appendix A attached hereto shall be applicable to this Agreement.

PART II

EFFECTIVE DATE

Part I of this Modification No. 1 shall become effective upon the Effective Date of Modification No. 1 to Contract No. AT (49-18)-12 among ERDA, TVA, CE and PMC.

IN WITNESS WHEREOF, the parties have executed
this Modification No. 1 this _____ day of _____,
197__.

U.S. ENERGY RESEARCH AND
DEVELOPMENT ADMINISTRATION

BREEDER REACTOR CORPORATION

By _____

By _____

Title _____

Title _____

I, _____, certify that I
am _____ of Breeder Reactor Corporation,
identified as a party herein; that _____
who signed this Contract on behalf of Breeder Reactor Corpo-
ration was then _____ of said corporation;
that said contract was duly signed for and on behalf of
said corporation by authority of its governing body and is
within the scope of its corporate powers.

In Witness Whereof, I have hereunto affixed my
hand and the seal of said corporation this _____ day of
_____, 197__.

(Seal)

APPROVAL OF OTHER PROJECT PARTICIPANTS

The foregoing Modification No. 1 to Contract No.
AT(49-18)-14 is hereby approved.

COMMONWEALTH EDISON COMPANY

By: _____

Title: _____

PROJECT MANAGEMENT CORPORATION

By: _____

Title: _____

TENNESSEE VALLEY AUTHORITY

By: _____

Title: _____

MODIFICATION NO. 1
TO
CONTRACT AT (49-18)-14

APPENDIX A

GENERAL TERMS AND CONDITIONS

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GENERAL TERMS AND CONDITIONS

1. Covenant Against Contingent Fees

BRC warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by BRC for the purpose of securing business. For breach or violation of this warranty the U.S. Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

2. Officials Not to Benefit

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

3. Assignment; Subcontracting

Neither this contract nor any interest therein nor claim thereunder shall be assigned or transferred or subcontracted by BRC, except as may be expressly agreed to in writing by ERDA.

4. Equal Opportunity

(The following clause is applicable unless this contract is exempt under the rules, regulations, and relevant orders of the Secretary of Labor (41 CFR, ch. 60).)

During the performance of this contract, BRC agrees as follows:

A. BRC will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. BRC will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. BRC agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by ERDA setting forth the provisions of this Equal Opportunity clause.

B. BRC will, in all solicitations or advertisements for employees placed by or on behalf of BRC, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

C. BRC will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by ERDA, advising the labor union or workers' representative of BRC's commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. BRC will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

E. BRC will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by ERDA and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

F. In the event of BRC's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended, in whole or in part and BRC may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

G. BRC will include the provisions of paragraphs A through G in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. BRC will take such action with respect to any subcontract or purchase order as ERDA may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event BRC becomes involved in, or threatened with, litigation with a subcontractor or vendor as a result of such direction by ERDA, BRC may request the United States to enter into such litigation to protect the interests of the United States.

5. Examination of Records by Comptroller General

A. BRC agrees that ERDA and the Comptroller General of the United States or any of their duly authorized representatives shall, until the expiration of 3 years after final payment under this contract or such lesser time specified in the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of BRC involving transactions related to this contract.

B. BRC further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under the subcontract or such lesser time specified in the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (1) purchase orders not exceeding \$2,500 and (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

C. The periods of access and examination described in A and B above, for records which relate to (1) litigation or the settlement of claims arising out of the performance of this contract, or (2) costs and expenses of this contract as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims, or exceptions have been disposed of.

D. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

MODIFICATION NO. 1
TO
49-18-12-1

MODIFICATION NO. 1
TO
CONTRACT
BETWEEN
PROJECT MANAGEMENT CORPORATION
AND
BREEDER REACTOR CORPORATION

MODIFICATION NO. 1
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49-18-12-1

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MODIFICATION NO. 1
TO
CONTRACT BETWEEN
PROJECT MANAGEMENT CORPORATION
AND
BREEDER REACTOR CORPORATION

This Modification No. 1 is entered into by and between Project Management Corporation (hereinafter "PMC"), and Breeder Reactor Corporation (hereinafter "BRC").

WHEREAS, PMC and BRC heretofore have entered into Contract 49-18-12-1, effective as of January 13, 1972, relative to a cooperative arrangement among the United States Atomic Energy Commission (hereinafter "AEC"), Tennessee Valley Authority (hereinafter "TVA"), Commonwealth Edison Company (hereinafter "CE"), PMC and BRC for effecting the design, development, construction, testing and operation of an electric utility system of a Liquid Metal Fast Breeder Reactor (LMFBR) power plant, as contemplated by Section 106 of Public Law 91-273, as amended (hereinafter the "Project");

AND WHEREAS, under a recent Government reorganization, the United States Energy Research and Development Administration (hereinafter "ERDA"), has succeeded to the nuclear energy development functions formerly vested in AEC;

AND WHEREAS, the parties to the Project have recognized the emergence of two factors which were not present at the time the said Contract was executed. First, there has been a substantial increase in the estimated cost of the Project. Second, the concept of a unified management of the Project through Government and utility industry membership on the PMC Board of Directors and staff was not approved by Congress;

AND WHEREAS, in light of these two factors, ERDA, TVA, CE and PMC are entering contemporaneously into Modification No. 1 to Contract No. AT (49-18)-12 governing the arrangements by which the Project will be managed;

AND WHEREAS, the parties hereto believe that said Modification No. 1 to Contract No. AT (49-18)-12 requires and renders appropriate certain modifications to Contract 49-18-12-1 heretofore entered into by them.

NOW, THEREFORE, IN CONSIDERATION of the foregoing and of the promises hereinafter set forth, the parties hereto agree that Contract 49-18-12-1 shall be modified in its entirety by substituting therefor the Agreement set forth below in Part I of this Modification No. 1. Such Agreement between the parties, as set forth in Part I below, shall become effective on the Effective Date, as defined in Part II of this Modification No. 1.

PART I
AGREEMENT
BETWEEN
PROJECT MANAGEMENT CORPORATION
AND
BREEDER REACTOR CORPORATION

This Agreement, entered into by and between Project Management Corporation (hereinafter "PMC"), a non-profit corporation organized and existing under the laws of the District of Columbia, and Breeder Reactor Corporation (hereinafter "BRC"), a non-profit corporation organized and existing under the laws of the District of Columbia, shall be effective on the Effective Date, as defined in Part II of this Modification No. 1.

WITNESSETH THAT:

WHEREAS, the parties hereto have entered into a Memorandum of Understanding, dated August 7, 1972, as amended, between and among the United States Atomic Energy Commission (hereinafter called "AEC"), Tennessee Valley Authority, Commonwealth Edison Company, PMC and BRC, setting forth the principal features of a cooperative arrangement for effecting the design, development, construction, testing and operation on an electric utility system of a Liquid Metal Fast Breeder Reactor (LMFBR) power plant, as contemplated by Sec. 106 of Public Law 91-273, as amended; and

WHEREAS, under a recent Government reorganization, the United States Energy Research and Development Administration (hereinafter "ERDA") has succeeded to the nuclear energy development functions formerly vested in AEC; and

WHEREAS, said Memorandum of Understanding provides for negotiation with a view to entering into certain specified Principal Project Agreements between certain of the parties thereto providing for the parties' undertakings with respect to the Project, including an agreement between PMC and BRC providing for, inter alia, the collection and disposition of certain Project funds, estimated to be approximately \$250 million, and the reporting and dissemination of Project data and information; and

WHEREAS, certain of the other Principal Project Agreements contemplated in the Memorandum of Understanding have been or will be executed and delivered;

NOW, THEREFORE, the parties hereto do agree as follows:

ARTICLE I - DEFINITIONS

As used throughout this Agreement the following terms shall have the meanings set forth below.

(a) The term "Utility Contribution Agreements" means agreements between BRC (and in some cases between both BRC and Edison Electric Institute) and individual electric utilities and electric systems, under which such electric utilities and electric systems will make payments for use in the Project, copies of the forms of which have been heretofore furnished to PMC and ERDA.

(b) The term "Contributions" means the payments made and to be made by electric utilities and electric systems pursuant to the Utility Contribution Agreements.

(c) The term "ERDA Agreement" shall mean the contract among ERDA, Commonwealth Edison Company, Tennessee Valley Authority and PMC, effective as of January 13, 1972, as amended by Modification No. 1 thereto.

(d) The terms "Principal Project Agreements", "Project", "Project Activities", and "Construction" all have the same meanings as set forth in the DA Agreement.

ARTICLE II - UTILITY CONTRIBUTION AGREEMENTS

BRC shall use its best efforts, working in cooperation with the Edison Electric Institute, the American Public Power Association and the National Rural Electric Cooperative Association, to maximize, to the extent feasible, financial support of the Project by the electric utility

industry of the United States, through securing the execution, delivery and performance of Utility Contribution Agreements by individual electric utilities and electric systems (hereinafter called "utilities"). In this respect BRC represents that, as of January 13, 1972, Utility Contribution Agreements had been executed and delivered or were in process for execution and delivery by those utilities listed in Appendix A, providing for aggregate Contributions of \$244,781,539.58.

ARTICLE III - ADMINISTRATION OF UTILITY CONTRIBUTION AGREEMENTS

The obligations of utilities to make Contributions are subject to certain conditions specified in the Utility Contribution Agreements, including certifications by BRC (hereinafter called the "Certifications").

(a) Certifications

BRC represents that it has delivered or shall deliver to the utilities the Certifications promptly upon the satisfaction of the conditions contained therein.

(b) Initial Delivery

Within ten (10) days after delivery of the Certifications required by (a) above, BRC shall:

1. Deliver to PMC a statement listing the utilities that have executed and delivered a Utility Contribution Agreement acceptable to BRC, setting forth the address and amount of Contribution opposite each name;
2. Make available to PMC, upon request, a copy of each such Utility Contribution Agreement held by BRC as of the date of such Certifications; and
3. Deliver to PMC a certificate, signed by an officer of BRC, stating that the Certifications required under (a), above, have been delivered.

(c) Supplemental Deliveries

BRC shall provide PMC, from time to time as PMC may request, a statement on the status of Utility Contribution Agreements and projections as to funds to be received thereunder and remitted to PMC. Within ten (10) days after receipt of each acceptable Utility Contribution Agreement delivered to BRC after the date of the Certifications required under (a), above, BRC shall deliver or make available to PMC documents of the character described in (b), above, with respect to each such Utility Contribution Agreement.

(d) Notices of Termination

Within ten (10) days after its receipt or issuance thereof, BRC shall deliver to PMC copies of any notices of termination received by BRC from utilities and duplicate originals of any notices of termination issued by BRC to utilities pursuant to the Utility Contribution Agreements.

(e) Possession of Agreements

BRC shall retain possession of the originals of all such Agreements for the benefit of PMC and subject to the security interest provided for in Article VI and the provisions of Article XIX.

ARTICLE IV - ADMINISTRATION OF FUNDS; PAYMENT OF BRC COSTS AND EXPENSES

(a) Bank Accounts

BRC shall receive and collect all Contributions and shall deposit them in a bank account or accounts at a bank or banks satisfactory to PMC, which accounts shall be administered in accordance with the provisions of this Agreement. All funds deposited in such bank accounts shall be and remain subject to the security interest of PMC as provided in Article VI and the accounts shall be so designated as to indicate to the bank the existence of said security interest. PMC's security interest in and to all funds in such accounts shall be superior to any claim or lien of the bank or any other party, irrespective of the basis of such latter claim or lien.

(b) Reserve for Expenses

BPC shall from time to time set aside funds and reserve on its books of account such portion of the funds deposited by it in the bank accounts as are necessary in BRC's judgment to meet BRC's reasonable costs and expenses relating to the Project (herein called the "Reserve for Expenses"). Such Reserve for Expenses shall not, at any time, exceed \$250,000 or such other ceiling amount as the parties may from time to time determine.

(c) Payment to PMC

BRC shall, promptly from time to time, but not later than ten (10) days after the receipt thereof, pay to PMC all funds deposited by BRC in the bank accounts which exceed the Reserve for Expenses; provided, however, that BRC shall not pay such funds to PMC unless there is in effect a ruling by the United States Internal Revenue Service to the effect that (i) PMC is an organization exempt from Federal Income Taxes under Section 501(c) of the Internal Revenue Code or (ii) the receipt of such funds by PMC for Project purposes will not constitute gross income to PMC for purposes of Federal Income Tax.

(d) Payment of BRC Costs and Expenses

BRC shall retain full right and title to the funds set aside as the Reserve for Expenses to pay for its reasonable costs and expenses relating to the Project. Within 60 days after the end of each fiscal year and of each six month interim period, commencing with the fiscal year ending December 31, 1972, BRC shall furnish to PMC a Report of Expenses for such period signed by a duly authorized officer of BRC stating (1) the nature of the costs and expenses paid, (2) the amounts paid and (3) that such costs and expenses were reasonably incurred by BRC in connection with the Project.

ARTICLE V - COVENANTS OF PMC(a) Use of Funds

PMC shall use its best efforts to carry out its responsibilities under the ERDA Agreement and shall use and apply all funds received from BRC solely in connection with the Project.

(b) Licensing

Subject to the provisions of Article XIII, PMC shall use its best efforts to grant or provide for the grant to BRC and the utilities of non-exclusive, irrevocable, royalty-free rights and licenses to make, use and to have others make and use in their behalf, patents, know-how, data and information relating to the design, construction and operation of facilities and equipment discovered or developed in the course of the Project.

(c) Performance of BRC Obligations

PMC shall, upon BRC's reasonable request and to the extent feasible, perform in BRC's behalf or assist BRC in performing BRC's obligations under the Utility Contribution Agreements. PMC hereby assumes BRC's indemnity obligations under the Utility Contribution Agreements, and BRC hereby assigns to PMC all of BRC's rights thereunder, said obligations and rights being as set forth in Appendix B.

ARTICLE VI - SECURITY INTEREST

BRC hereby grants to PMC and its successors and assigns, a security interest in all Utility Contribution Agreements held by BRC, together with all replacements and substitutions therefor, and in all proceeds (including cash) thereof (hereinafter called "Collateral") for the purpose of securing the obligations of BRC hereunder. In the event BRC defaults in its obligations hereunder, PMC shall have the right to enforce its security interest in the Collateral, including the right to obtain physical possession thereof, the right to notify and instruct all utilities obligated under Utility Contribution Agreements to make payments directly to PMC, and the right to exercise any and all rights and remedies available under applicable law. BRC shall, upon the request of PMC, cooperate fully with PMC in taking whatever action and signing and filing whatever documents PMC considers necessary or desirable to perfect and enforce the security interest of PMC provided for herein, including delivery of the Collateral to PMC or its designee and issuance of any notifications and instructions to utilities which have executed Utility Contribution Agreements. As between PMC and BRC, the security interest granted under this Article VI shall not affect BRC's right to reimbursement for costs and expenses out of the Reserve for Expenses as provided in Article IV.

ARTICLE VII - ENFORCEMENT OF UTILITY CONTRIBUTION AGREEMENTS

BRC shall, upon the request of PMC, use its best efforts to enforce, and to cooperate with PMC and its successors and assigns, in the enforcement of such Agreements, including institution of legal action in its own name or on behalf of PMC and its successors and assigns, to collect Contributions due thereunder. BRC's reasonable costs and expenses (including reasonable attorneys' fees) incurred in fulfilling its obligations under this Article VII shall be reimbursable costs and expenses under Article IV(d). Except with the prior written consent of PMC, BRC shall not amend, modify or terminate any Utility Contribution Agreement or waive any of its rights thereunder.

ARTICLE VIII - [RESERVED]ARTICLE IX - [RESERVED]ARTICLE X - BRC AS AGENT FOR COLLECTION

BRC shall serve as the agent of PMC to collect, deposit and remit Contributions to PMC as provided for in this Agreement. BRC's reasonable costs and expenses incurred in fulfilling its obligations under this Article X shall be reimbursable costs and expenses under Article IV(d).

ARTICLE XI - ACCOUNTS, RECORDS AND INSPECTION(a) BRC Accounts

BRC shall maintain such accounts, records and other documents as are required in accordance with sound business practices and generally accepted accounting principles to record all transactions relating to BRC's administration of the bank

accounts and Reserve for Expenses described in Article IV (a) and (b), including the receipt and disposition of all Contributions and all costs and expenses incurred by BRC with respect to the Project. The system of accounts employed by BRC shall be acceptable to PMC. BRC shall furnish PMC annual financial statements audited by a firm of independent public accountants satisfactory to PMC.

(b) PMC Accounts

PMC shall maintain such accounts, records and other documents regarding the financial administration of the Project as are required by the ERDA Agreement.

(c) Inspection and Audit of Accounts

All accounts, records and other documents maintained by either party hereto pursuant to (a) and (b), above, shall be maintained and preserved for not less than three years after final payment under the ERDA Agreement and shall be subject to inspection and audit by the other party and by ERDA and the Comptroller General of the United States at all reasonable times.

ARTICLE XII - TERMINATION OF PROJECT AND DISPOSITION OF FUNDS

(a) Termination

The rights and obligations of the parties with respect to termination of the Project shall be as set forth in paragraph 11.0 of the ERDA Agreement, which is hereby incorporated herein by reference.

(b) Disposition of Funds on Termination

Upon termination, BRC shall pay to PMC all funds under BRC's possession, control or direction at the date of termination, less any funds set aside by BRC as a Reserve for Expenses pursuant to Article IV(b) above. BRC shall also assign to PMC all of BRC's rights, if any, to collect and receive any amounts due and unpaid as of the date of termination under

any Utility Contribution Agreement; it being understood, however, that no contributing utility shall have any obligation to make any payment under a Utility Contribution Agreement which payment becomes due at any time following the date of termination. After BRC has satisfied all of its obligations relating to the Project, BRC shall promptly pay any funds remaining in the Reserve for Expenses to PMC.

ARTICLE XIII - INVENTIONS, DISCOVERIES, PATENTS

The rights of the parties in regard to inventions, discoveries, patents, know-how, data and information resulting from, arising under or related to Project Activities, including the grant to BRC and to each of the utilities which has entered into a Utility Contribution Agreement of a non-exclusive, irrevocable, royalty-free license to make and use any such invention, discovery, know-how, data and information whether patented or not, shall be as set forth in paragraphs E-1.0 and E-3.0 of the ERDA Agreement, which are hereby incorporated herein, and PMC shall take such actions as BRC shall reasonably require in order to fully enforce the rights granted to BRC under said paragraphs.

ARTICLE XIV - LIAISON AND COUNSELING FUNCTIONS OF BRC

(a) Dissemination of Information

BRC shall serve as a primary liaison between the Project and the electric utility industry and the public, and in this respect shall use its best efforts to help assure the broad dissemination of Project data and information within such limitations and restrictions as may exist under applicable law or any Principal Project Agreement. PMC and BRC shall consult regularly with respect to programs for dissemination of such data and information.

(b) Industry Personnel

BRC shall serve as a primary liaison between the Project and the electric utility industry with respect to arranging for industry personnel to engage in Project Activities or to receive training in connection therewith, including, to the extent practi-

cable, the opportunity to have qualified personnel visit, observe and work on the Project within such limitations and restrictions as may exist under applicable law or the Principal Project Agreements. Subject to the foregoing limitations and restrictions, and to the extent practicable, PMC shall provide or arrange for reasonable opportunities for qualified utility industry personnel designated by BRC and acceptable to PMC to observe and engage in Project Activities or receive training in connection therewith.

(c) Senior Counsel

BRC shall be reasonably available, through its directors, officers and committees, to provide senior counsel to PMC in the interest of the Project.

ARTICLE XV - REPORTING OF PROJECT ACTIVITIES - ERDA PARTICIPATION

(a) PMC shall (i) keep BRC fully advised regarding its activities with respect to the Project, (ii) furnish BRC technical and scientific information and other data developed in the course of the Project and (iii) provide BRC reports (at least quarterly) concerning the progress and the economic and technical status of the Project in such detail as BRC may reasonably request, both within such limitations and restrictions as may exist under applicable law or the Principal Project Agreements. As part of this obligation to keep BRC fully advised, PMC shall provide BRC at least annually a projected budget (covering cash flow, obligations, anticipated commitments and contingencies) and will notify BRC in writing should it at any time reasonably appear that Project resources will be insufficient to enable the continued effective conduct of the Project. PMC shall also provide BRC annually with a copy of its annual audited financial statements.

(b) BRC shall give ERDA reasonable advance notice of and the opportunity to attend the meetings of BRC's Board of Directors as an observer, shall otherwise keep ERDA generally informed of its activities, and shall afford ERDA reasonable opportunities to consult with BRC.

ARTICLE XVI - STANDARD OF PERFORMANCE

In recognition of the fact that PMC, BRC and the electric utility industry are participating in the Project on a nonprofit basis; the unusual risks associated with the Project; and the importance of the Project to the future energy resources of the people of the United States, the respective undertakings and obligations of PMC and BRC and their directors, officers, agents and employees under this Agreement shall be deemed to be fully performed and satisfied by the exercise of good faith, best efforts to perform and satisfy such undertakings and obligations. In performing their obligations hereunder, neither party shall be required to take any action which would constitute it a public utility or affiliate thereof within the meaning of any federal, state or local law or which would conflict with the provisions of its Articles of Incorporation or By-laws.

ARTICLE XVII - DISPUTES

(a) Any controversy, claim, counterclaim or dispute arising out of or relating to this Agreement or any breach thereof, shall be submitted to arbitration upon the request of either PMC or BRC in the manner provided herein. The party submitting a request for arbitration shall serve notice upon the other party setting forth in detail the matter or matters to be arbitrated, including a statement of the facts or circumstances giving rise to the controversy, claim, counterclaim or dispute involved and the party's contention with respect to the correct resolution thereof. If the request for arbitration involves in whole or in part a matter of accounting, the sole arbitrator with respect to the accounting matter shall be a firm of independent public accountants selected jointly by the parties. With respect to any other question, or if such firm of independent public accountants is unable or unwilling to act, the parties shall endeavor to agree upon and appoint one person to act as sole arbitrator. If the parties fail to agree upon such sole arbitrator within such 15 days, they shall, and either of them may, within five days thereafter, request the Chief Judge of the United States Court of Appeals for the Seventh Circuit to appoint an arbitrator. If the Chief Judge does not appoint

an arbitrator within 30 days of the date of the request for arbitration, the parties shall, and either of them may, within the next ten days thereafter, request the American Arbitration Association to appoint the arbitrator pursuant to its then existing rules.

(b) The arbitration shall be conducted in accordance with the rules of the American Arbitration Association then in effect, to the full extent that such rules are not inconsistent with Illinois law. The parties agree that any arbitrator serving hereunder shall give full force and effect to all of the provisions of this Agreement. The findings and award of the arbitrator shall be binding and conclusive with respect to the matter or matters submitted to arbitration, except as the same may be modified, corrected or vacated in accordance with the Illinois statute then in effect governing arbitration. The costs of arbitration shall be divided equally between the parties.

ARTICLE XVIII - AMENDMENT - SUCCESSORS AND ASSIGNS

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns, and shall not be amended or modified without the prior written approval of ERDA, Commonwealth Edison Company and Tennessee Valley Authority. This Agreement shall be construed so as to be consistent with the provisions of the ERDA Agreement.

ARTICLE XIX - ARRANGEMENTS SECURING CERTAIN INDEMNITIES

Notwithstanding any other provisions of this Agreement, the parties hereto expressly agree to recognize and honor the provisions of paragraph 9.4 of the ERDA Agreement, which paragraph is incorporated herein by reference. BRC also agrees that upon proper demand of TVA and CE, or upon proper demand of the trustee appointed pursuant to the provisions of said paragraph, it will, without regard to any other provisions of this Agreement deliver such documents as may be necessary to fully effectuate the provisions of said paragraph, including, if required, the assignment and delivery

of the TVA-BRC and the CE-BRC Contribution Agreements to said trustee. BRC further agrees, notwithstanding any other provisions of this Agreement, that it will not deduct monies for expenses or reserves otherwise permitted under this Agreement from payments due, paid, or to become due under the TVA-BRC or the CE-BRC Contribution Agreements and waives all of its rights to make such deductions. BRC further waives any right of setoff or recoupment it may have now or in the future with respect to such funds. BRC and PMC hereby expressly acknowledge that the provisions of this Article XIX shall control over any other provisions of this Agreement which may be inconsistent with this Article XIX.

PART II

EFFECTIVE DATE

Part I of this Modification No. 1 shall become effective upon the Effective Date of Modification No. 1 to Contract No. AT (49-18)-12 among ERDA, TVA, CE and PMC.

IN WITNESS WHEREOF the parties have executed this Modification No. 1 this _____ day of _____, 1975.

PROJECT MANAGEMENT CORPORATION

By: _____
Chairman of the Board

BREEDER REACTOR CORPORATION

By: _____
Chairman of the Board

I, _____ certify that I am
 _____ of Project Management Corporation
 identified as a party herein; that
 who signed this contract on behalf of the corporation was then
 _____ of said corporation; that said
 contract was duly signed for and on behalf of said corporation
 by authority of its governing body and is within the scope of
 its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand
 and the seal of said corporation this _____ day of _____,
 1975.

 (SEAL)

I, _____ certify that I am
 _____ of Breeder Reactor Corporation,
 identified as a party herein; that
 who signed this contract on behalf of Breeder Reactor Corporation
 was then _____ of said corporation; that
 said contract was duly signed for and on behalf of said corpor-
 ation by authority of its governing body and is within the
 scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand
 and seal of said corporation this _____ day of _____,
 1975.

 (SEAL)

APPROVAL OF OTHER PROJECT PARTICIPANTS

Pursuant to the provisions of Article XVIII thereof, the foregoing Modification No. 1 to Contract No. 49-18-12-1 is hereby approved.

U.S. ENERGY RESEARCH AND DEVELOPMENT
ADMINISTRATION

By: _____
Title: _____

COMMONWEALTH EDISON COMPANY

By: _____
Title: _____

TENNESSEE VALLEY AUTHORITY

By: _____
Title: _____

MODIFICATION NO. 1
TO
49-18-12-1

APPENDIX A

	<u>Total Pledge</u>
Accomack-Northampton Elec. Coop. (Va.)	\$ 8,746.03
Adams Elec. Coop., Inc. (Pa.)	22,030.00
Adams-Marquette Elec. Coop. (Wis.)	10,087.29
Aiken Elec. Coop., Inc. (S.C.)	29,500.00
Alabama Power Co.	4,619,132.00
Anza Elec. Coop., Inc. (Cal.)	1,279.34
Arizona Elec. Power Coop., Inc.	111,565.00
Arizona Public Service Co.	1,250,000.00
Ark Valley Elec. Coop. Assn., Inc. (Kan.)	13,051.47
Arkansas-Missouri Power Co.	233,000.00
Arkansas Power & Light Co.	2,188,446.39
Arkansas Valley Electric Coop. Corp.	24,662.80
Arrowhead Elec. Coop., Inc. (Minn.)	1,773.67
Ashley-Chicot Elec. Coop., Inc. (Ark.)	5,063.00
Atlantic City Electric Co.	884,460.00
Baker Elec. Coop., Inc. (N.D.)	11,986.00
Barren Elec. Coop. (Wis.)	15,000.00
Beltrami Elec. Coop., Inc. (Minn.)	11,102.90

	<u>Total Pledge</u>
Benton REA (Wash.)	\$ 24,600.00
Berkeley Elec. Coop., Inc. (S.C.)	39,709.00
Big Bend Elec. Coop., Inc. (in process) (Wash.)	17,500.00
Blachly-Lane County Coop. Elec. Assn. (Ore.)	17,700.00
Black River Elec. Coop. (Mo.)	19,942.22
Blue Ridge EMC (N.C.) (including New River P&L Co.)	83,000.00
Boston Edison Company	1,740,000.00
Brasos Elec. Power Coop., Inc. (Tex.)	215,165.83
Brown-Atchison Elec. Coop. Assn., Inc. (Kan.)	6,250.00
Buffalo Elec. Coop. (Wis.)	9,151.83
Burke-Divide Elec. Coop., Inc. (N.D.)	8,349.55
Butler REC Assn., Inc. (Kan.)	9,554.93
C. & W. REC Assn., Inc. (Kan.)	6,456.00
California-Pacific Utilities Co.	110,000.00
Callaway Elec. Coop. (Mo.)	6,431.70
Canadian Valley Elec. Coop., Inc. (Okla.)	20,335.40
Capital Electric Coop., Inc. (N.D.)	725.00
Carolina Power & Light Co.	3,450,000.00
Carroll EMC (Ga.)	24,315.00
Carroll Elec. Coop. Corp. (Ark.)	28,978.00
Carteret-Craven EMC (N.C.)	17,779.00
Cavalier REC, Inc. (N.D.)	8,160.00

	<u>Total Fledge</u>
Central Alabama Elec. Coop.	\$ 23,380.00
Central Hudson Gas & Elec. Co.	677,800.00
Central Illinois Light Co.	676,000.00
Central Illinois Public Service Co.	1,070,000.00
Central Kansas Elec. Coop., Inc.	30,750.00
Central Lincoln People's Utility District (Ore.)	100,000.00
Central Power & Light Co.	1,824,000.00
Central Wisconsin Electric Coop.	4,933.00
Cheyenne Light, Fuel & Power Co.	60,000.00
Chippewa Valley Elec. Coop. (Wis.)	8,850.00
Choctawhatchee Elec. Coop., Inc. (Fla.)	23,824.50
The Cincinnati Gas & Electric Co.	2,353,000.00
Citizen's Electric Co. (Pa.)	16,649.00
City of Bandon (Ore.) (Letter of Intent)	8,380.00
City of Foley, Utilities Board of The (Ala.)	26,705.00
City of Forest Grove (Ore.)	23,150.00
City of Idaho Falls (Idaho)	52,900.00
City of McMinnville, Water & Light Dept. (Ore.) (Letter of Intent)	39,810.00
City of McPherson, Kansas, Board of Public Utilities	33,014.00
City of Richland (Wash.)	71,680.00
City of Seattle, Department of Lighting	1,600,000.00
Clatskanie Elec. Coop., Inc. (La.)	18,259.69

	<u>Total Pledge</u>
Clark Elec. Coop. (Wis.)	\$ 15,578.00
Clay Electric Coop., Inc. (Fla.)	75,055.56
Clearwater-Polk Elec. Coop., Inc. (Minn.)	4,684.60
Clearwater Power Co. (Idaho)	22,040.00
The Cleveland Electric Illuminating Co.	3,413,000.00
Coastal Elec. Coop., Inc. (S.C.)	6,896.14
Codington-Clark Elec. Coop., Inc. (S.D.)	7,126.60
Columbia REA, Inc. (Wash.)	21,510.00
Columbus REC (Wis.)	6,638.73
Columbus & Southern Ohio Electric Co.	1,425,660.00
Commonwealth Edison Co.	11,414,200.00
Concordia Elec. Coop., Inc. (La.)	17,299.69
Consolidated Edison Co. of N. Y., Inc.	7,981,000.00
Consumers Power Co. (in process)	4,548,888.00
Consumers Power, Inc. (Ore.)	39,650.00
Cooperative Power Assn. (Minn.)	275,320.00
Coos-Curry Elec. Coop. Inc. (Ore.)	42,318.00
Cotton Elec. Coop., Inc. (Okla.)	47,500.00
Cowlitz County PUD #1 (Wash.)	294,150.00
Crawford Elec. Coop. (Wis.)	5,667.00
Culvre River Elec. Coop., Inc. (Mo.)	14,928.45
Dallas Power & Light Co.	1,965,800.00
Dayte REC, Inc. (Ohio)	9,699.10
The Dayton Power & Light Co.	1,639,954.00
The Detroit Edison Co.	6,920,000.00

	<u>Total Pledge</u>
D.E.K. REC (Iowa)	\$ 9,449.98
Delmarva Power & Light Co.	1,148,000.00
Dixie EMC (La.)	45,000.00
Douglas Elec. Coop., Inc. (Ore.)	17,324.00
Duke Power Co.	7,235,650.00
Dunn County Elec. Coop. (Wis.)	11,873.50
East Central Okla. Elec. Coop. Corp.	28,523.00
E. Kentucky REC Corp.	333,082.00
Eastern Utilities Associates	552,500.00
The Easton Utilities Comm. (Md.)	15,690.00
Eau Claire Elec. Coop. (Wis.)	11,561.84
Edison Sault Electric Co. (Mich.)	10,000.00
El Paso Electric Co.	518,600.00
The Empire District Electric Co.	308,000.00
Estes Park, Town of (Colo.)	4,748.40
Eugene Water & Electric Board (Ore.)	358,390.00
Fairfield Elec. Coop., Inc. (S.C.)	12,834.51
First Elec. Coop. Corp. (Ark.)	59,150.00
Fitchburg Gas & Electric Light Co.	66,320.00
Flathead Elec. Coop., Inc. (Mont.)	11,869.00
Flint Hills REC Assn. (Kan.)	13,500.00
Florida Power Corp.	1,944,282.00
Four County EMC (N.C.)	25,592.00

	<u>Total Pledge</u>
Franklin REC (Iowa)	\$ 6,258.90
Freeborn-Mower Elec. Coop. (Minn.)	17,632.00
The Frontier Power Co. (Ohio)	10,371.34
Georgia Power Co.	3,927,757.00
Golden Valley Elec. Assn., Inc. (Alaska)	10,000.00
Grand Elec. Coop., Inc. (S.D.)	8,262.60
Grant Elec. Coop. (Wis.)	14,040.00
Great Plains Elec. Coop., Inc. (Kan.)	3,539.40
Grundy County REC (Iowa)	7,750.00
Guernsey-Muskingum Elec. Coop., Inc. (Ohio)	13,620.50
Gulf Power Co.	706,404.00
Gulf States Utilities Co.	3,210,000.00
Halifax EMC (N.C.)	7,349.00
Hancock-Wood Elec. Coop., Inc. (Ohio)	20,000.00
Hardin County REC (Iowa)	9,401.27
Harrison REA, Inc. (W. Va.)	2,949.00
Hershey Electric Co.	56,777.00
Home Light & Power Co.	30,000.00
Wood River Elec. Coop. (Ore.)	13,100.00
Horry Elec. Coop., Inc. (S.C.)	17,227.20
Houston Lighting & Power Co.	5,620,000.00
Howard Elec. Coop. (Mo.)	2,764.00
Humboldt County REC (Iowa)	6,457.70

	<u>Total Pledge</u>
Idaho Power Co. (in process)	\$ 1,485,900.00
Illini Elec. Coop. (Ill.)	9,029.35
Illinois Power Company	1,993,200.00
Indianapolis Power & Light Co.	1,433,000.00
Inland Power & Light Co. (Wash.)	47,800.85
Interstate Power Co.	509,200.00
Iowa Electric Light & Power Co.	580,000.00
Iowa-Illinois Gas & Electric Company	610,700.00
Iowa Power & Light Co.	678,404.00
Iowa Public Service Co.	408,690.00
Iowa Southern Utilities Co.	242,680.00
Jackson County REMC (Ind.)	24,420.00
Jackson Elec. Coop. (Wis.)	6,784.50
James Valley Elec. Coop., Inc. (N.D.)	5,000.00
Jasper-Newton Elec. Coop., Inc. (Tex.)	20,126.00
Jefferson Davis Elec. Coop., Inc. (La.)	17,643.80
Jersey Central Power & Light Co.	1,430,077.00
Jones-Onslow EMC (N.C.)	37,415.20
Jump River Elec. Coop., Inc. (Wis.)	6,285.00
Kaw Valley Elec. Coop. Co., Inc. (Kan.)	8,017.20
Kay Elec. Coop. (Okla.)	15,680.00
Kosciusko County REMC (Ind.)	15,080.00
Lake Superior District Power Co. (Wis.)	101,220.00

	<u>Total Pledge</u>
Lane Elec. Coop., Inc. (Ore.)	\$ 43,010.00
Lane-Scott Elec. Coop., Inc. (Kan.)	4,985.50
Laurens Elec. Coop., Inc. (S.C.)	24,764.60
Lee County Elec. Coop., Inc. (Fla.)	74,550.00
Licking Rural Elec., Inc. (Ohio)	19,956.00
Lighthouse Elec. Coop., Inc. (Tex.)	19,180.00
Lone Wolf Elec. Coop., Inc. (Tex.)	4,228.76
Long Island Lighting Co.	2,457,500.00
Lost River Elec. Coop., Inc. (Idaho)	4,100.00
Louisiana Power & Light Co.	2,141,193.50
Lower Valley Power & Light, Inc. (Wy.)	21,270.00
Lynches River Elec. Coop., Inc. (S.C.)	14,331.26
Lyntegar Elec. Coop., Inc. (Tex.)	32,905.60
Madison Gas & Electric Co.	292,580.00
Marion REC, Inc. (Ohio)	6,479.00
Matanuska Elec. Assn., Inc. (Alaska)	12,000.00
McCleary Light & Power (Wash.)	6,340.00
McDonough Power Coop. (Ill.)	8,980.00
Mecklenburg Elec. Coop. (Va.)	29,766.78
Metropolitan Edison Co.	1,521,469.00
Mid-Carolina Elec. Coop., Inc. (S.C.)	20,896.22

	<u>Total Pledge</u>
Midstate Elec. Coop., Inc. (Ore.)	\$ 14,320.00
Midwest Elec. Coop., Inc. (Tex.)	13,842.97
Midwest Elec., Inc. (Ohio)	19,054.93
Minnesota Power & Light Co.	841,200.00
Mississippi Power Co.	896,921.00
Mississippi Power & Light Co.	1,089,380.00
Missoula Elec. Coop., Inc. (Mont.)	8,860.00
Mohave Elec. Coop., Inc. (Ariz.)	10,481.10
Monroe County Elec. Coop., Inc. (Ill.)	6,923.80
Montana-Dakota Utilities Co.	222,150.00
Mor-Gran-Sou Elec. Coop., Inc. (N.D.)	9,924.23
Mt. Carmel Public Utility Co.	18,877.62
Mountrail Elec. Coop., Inc. (N.D.)	7,845.26
N.C.K. Elec. Coop., Inc. (Kan.)	6,666.00
The Nemaha-Marshall Elec. Coop. Assn. (Kan.)	6,700.00
Nespelem Valley Elec. Coop., Inc. (Wash.)	4,983.00
New England Gas & Electric Assn.	524,510.00
New England Power Co.	2,727,830.00
New Jersey Power & Light Co.	572,892.00
New Orleans Public Service, Inc.	895,265.70
New York State Electric & Gas Corp.	1,825,000.00
Newport Electric Corp.	86,795.00

	<u>Total Pledge</u>
Niagara Mohawk Power Co.	\$ 3,000,000.00
Nodak Rural Electric Coop., Inc. (N.D.)	49,915.96
North Arkansas Elec. Coop., Inc.	26,678.63
North Central Elec. Coop., Inc. (Ohio)	17,717.60
North Star Elec. Coop., Inc. (Minn.)	3,420.00
North Western Elec. Coop., Inc. (Ohio)	8,567.60
Northeast Missouri Elec. Power Coop.	67,510.00
Northeast Oklahoma Elec. Coop., Inc.	21,208.00
Northeast Utilities Service Co.	3,510,560.00
Northern Lights, Inc. (Idaho)	14,500.00
Northern Michigan Elec. Coop., Inc.	32,973.50
Northern Neck Elec. Coop. (Va.)	11,667.80
Northern Piedmont Elec. Coop. (Va.)	15,386.00
Northern States Power Co.	3,540,000.00
Northwest Iowa Power Coop.	73,172.22
N. W. Elec. Power Coop., Inc. (Mo.)	84,870.00
Northwestern Public Service Co.	125,000.00
The Northwestern REC Assn., Inc. (Pa.)	25,300.00
Oakdale Elec. Coop. (Wis.)	13,361.00
The Oconee EMC (Ga.)	13,293.20
Oconto Elec. Coop. (Wis.)	8,340.30
Ohio Edison Co.	3,326,000.00
Oliver-Mercer Elec. Coop., Inc. (N.D.)	3,256.19

	<u>Total Pledge</u>
Orange and Rockland Utilities, Inc.	\$ 543,860.00
Osage Valley Elec. Coop. Assn. (Mo.)	15,260.00
Otter Tail Power Co.	276,672.00
Ouachita Elec. Coop., Corp. (Ark.)	12,051.00
Pacific Gas & Electric Co.	10,121,077.00
Pacific Power & Light Co.	3,060,000.00
Palmetto Elec. Coop., Inc. (S.C.)	15,312.00
Pee Dee EMC (N.C.)	16,910.00
Pennsylvania Electric Co.	1,820,035.00
Pennsylvania Power Co.	636,000.00
Pennsylvania Power & Light Co.	3,600,000.00
People's Coop. Power Assn., Inc. (Minn.)	23,941.10
Philadelphia Electric Co.	5,681,900.00
Pioneer REC, Inc. (Ohio)	23,831.97
P.K.M. Elec. Coop., Inc. (Minn.)	7,675.00
Planters EMC (Ga.)	15,480.00
Plumas-Sierra REC, Inc. (Cal.)	7,153.44
Pocahontas REC (Iowa)	8,285.10
Polk Burnett Elec. Coop. (Wis.)	12,516.70
Portland General Electric Co.	2,193,400.00
Potomac Electric Power Co.	2,290,000.00
P.R. & W. Elec. Coop. Assn., Inc. (Kan.)	3,964.32

	<u>Total Pledge</u>
Price Elec. Coop., Inc. (Wis.)	\$ 4,787.30
Public Service Co. of Colorado	1,670,000.00
Public Service Co. of Indiana, Inc.	2,276,120.00
Public Service Co. of New Hampshire	709,650.00
Public Service Co. of Oklahoma	1,279,000.00
Public Service Electric & Gas Co.	6,254,934.00
PUD #1 of Chelan County (Wash.)	112,640.00
PUD #1 of Clark County (Wash.)	350,590.53
PUD #1 of Douglas County (Wash.)	36,750.00
PUD #1 of Franklin County (Wash.)	70,700.00
PUD #1 of Grays Harbor County (Wash.)	192,090.00
PUD #1 of Kittitas County (Wash.)	5,930.00
PUD #1 of Klickitat County (Wash.)	29,950.00
PUD #1 of Lewis County (Wash.)	76,060.00
PUD #1 of Pend Oreille County (Wash.)	5,000.00
PUD #1 of Skamania (in process) (Wash.)	14,454.00
PUD #1 of Snohomish County (Wash.)	739,960.00
PUD #2 of Grant County (Wash.)	161,690.00
PUD #2 of Pacific County (Wash.)	3,934.00
PUD #3 of Mason County (Wash.)	51,900.00
Puget Sound Power & Light Co.	1,835,438.00
Radiant Elec. Coop., Inc. (Kan.)	7,425.00
Randolph EMC Corp. (N.C.)	22,723.50

	<u>Total Pledge</u>
The Rayle EMC (Ga.)	\$ 14,623.42
Red Lake Electric Coop., Inc. (Minn.)	8,205.54
Red River Valley Coop. Power Assn. (Minn.)	10,112.78
Riceland Elec. Coop., Inc. (Ark.)	5,318.10
Rich Mountain Elec. Coop., Inc. (Ark.)	5,000.00
Roanoke EMC (N.C.)	12,607.91
Rochester Gas & Elec. Corp.	950,000.00
Roseau Elec. Coop., Inc. (Minn.)	6,330.00
R.S.R. Elec. Coop., Inc. (N.D.)	2,500.00
Salt River Project Agricultural Improvement & Power District (Ariz.)	1,080,225.00
St. Croix County Elec. Coop. (Wis.)	11,014.30
St. Joseph Light & Power Co.	171,110.00
Salmon River Elec. Coop., Inc. (in process) (Idaho)	3,754.00
San Diego Gas & Electric Co.	1,490,000.00
Sedgwick County Elec. Coop. Assn. (Kan.)	8,516.00
Shelby Elec. Coop. (Ill.)	16,449.10
Shennandoah Valley Elec. Coop. (Va.)	34,000.00
Sherrard Power System	10,000.00
Sheyenne Valley Elec. Coop., Inc. (N.D.)	5,000.00
Sho-Ho Power Corp. (Mo.)	19,330.00
Sierra Pacific Power Co.	408,730.00
Sioux Center Municipal Utilities (Iowa)	3,560.97

	<u>Total Pledge</u>
Sioux Valley Empire Elec. Assn., Inc. (S.D.)	\$ 28,137.10
Slash Pine EMC (Ga.)	7,313.00
Slope Elec. Coop., Inc. (N.D.)	5,996.70
Smoky Hill Elec. Coop., Inc. (Kan.)	4,280.00
Smoky Valley Elec. Coop. Assn., Inc. (Kan.)	1,625.00
South Carolina Electric & Gas Co.	1,382,301.00
South Central Power Co. (Ohio)	100,172.60
South Mississippi Elec. Power Assn.	233,767.57
South Plains Elec. Coop., Inc. (Tex.)	33,752.72
Southern California Edison Co.	10,555,000.00
Southern Indiana Gas & Electric Co.	466,340.00
Southern Iowa Electric Coop., Inc.	6,069.00
Southern Maryland Elec. Coop., Inc.	129,440.00
Southside Elec. Coop. (Va.)	44,076.86
Southwest Arkansas Elec. Coop. Corp.	28,465.00
Southwest Texas Elec. Coop., Inc.	8,485.00
Southwestern Electric Power Co.	1,143,917.00
Springfield Utility Board (Ore.)	43,950.00
Stanford Elec. Coop., Inc. (Tex.)	10,110.00
Sullivan County REC, Inc. (Pa.)	5,349.70
Sumner-Cowley Elec. Coop., Inc. (Kan.)	10,518.62

	<u>Total Pledge</u>
Surprise Valley Elec. Corp. (Cal.)	\$ 8,600.00
Surry-Yadkin EMC (N.C.)	17,653.77
Swisher County Elec. Coop., Inc. (Tex.)	19,000.00
Talquin Elec. Coop., Inc. (Fla.)	30,865.00
Tanner Elec. (Wash.)	1,900.00
Taylor County Elec. Coop. (Wis.)	5,720.00
Taylor Elec. Coop., Inc. (Tex.)	13,628.26
Tennessee Valley Authority	21,700,000.00
Texas Electric Service Co.	2,744,500.00
Texas Power & Light Co.	2,220,000.00
Three Notch EMC (Ga.)	18,549.00
Tideland EMC (N.C.)	10,904.62
Tillamook People's Utility District (Ore.)	54,645.00
Tipmont REMC (Ind.)	24,683.00
Tongue River Elec. Coop., Inc. (Mont.)	5,864.00
Trempealeau Elec. Coop. (Wis.)	13,316.00
Tri-County Elec. Coop., Inc. (Ill.)	20,895.88
Tri-County Elec. Coop. (Minn.)	24,000.00
Tri-County Elec. Coop. (Va.)	8,293.22
Umatilla Elec. Coop. Assn. (Ore.)	26,320.00
Union Electric Co.	4,073,000.00

	<u>Total Pledge</u>
U.C.I. Corporation	\$ 113,039.70
The United Illuminating Co.	996,800.00
Utah Power & Light Co.	1,284,200.00
Vera Irrigation District #15 (Wash.)	16,290.00
Verdigris Valley Elec. Coop., Inc. (Okla.)	20,000.00
Vigilante Elec. Coop., Inc. (Mont.)	7,660.16
Virginia Elec. Coop. (Va.)	43,167.90
Virginia Electric & Power Co.	5,253,500.00
Walton EMC (Ga.)	36,000.00
Washington Elec. Coop., Inc. (Ohio)	8,274.06
Washington Elec Coop., Inc. (Vt.)	8,510.00
Waterford Electric Light Co.	3,413.00
Waushara County Elec. Coop., Inc. (Wis.)	5,335.46
Wayne White Counties Elec. Coop. (Ill.)	46,813.30
West Central Elec. Coop., Inc. (S.D.)	12,640.00
West River Elec. Assn., Inc. (S.D.)	11,520.93
West Texas Utilities Co.	536,000.00
Wheatland Elec. Coop., Inc. (Kan.)	44,012.35
Wild Rice Elec. Coop., Inc. (Minn.)	12,673.80
Winnebago REC Assn. (Iowa)	7,090.00
Wisconsin Electric Power Co.	2,881,250.00
Wisconsin Power & Light Co.	810,888.00
Wisconsin Public Service Corp.	858,300.00
Withlacoochee River Elec. Coop., Inc. (Fla.)	27,978.00
Wright County REC (Iowa)	<u>8,618.00</u>
	<u>\$244,781,539.58</u>
Total Number of Agreements	<u>356</u>

MODIFICATION NO. 1
TO
49-18-12-1

APPENDIX B

BRC'S INDEMNITY OBLIGATIONS UNDER
UTILITY CONTRIBUTION AGREEMENTS

BRC shall indemnify and hold Utility^{1/} harmless against any loss, damage, liability or expense, including attorney's fees, incurred by Utility which arise out of claims asserted by any third party for personal injury, death or property damage resulting from the negligent conduct of work performed in connection with the Project by PMC, CE, TVA or AEC or any of their contractors; provided, that Utility shall give BRC timely notice of any such claim, whereupon BRC shall have the right, but not the obligation to assume or to have another participant in the Project assume the defense of such claim. In the event BRC does assume, or have another participant in the Project assume the defense of such a claim, Utility^{1/} shall have the right, at its own expense, to have its counsel consult with BRC or such other Project participant as to the defense thereof.

^{1/} Edison Electric Institute is included as a named indemnitee in those Utility Contribution Agreements to which it is a party.



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-199272

JUN 30 1981
June 24, 1981

The Honorable Marilyn L. Bouquard
Chairman, Subcommittee on Energy
Research and Production
Committee on Science and Technology
House of Representatives

Dear Madam Chairman:

This replies to your May 13, 1981, letter in which you asked several questions concerning the Clinch River Breeder Reactor project (CRBRP). Your questions focus primarily upon the responsibilities and obligations of the Government and participating utility companies in connection with the utilities' financial contributions to the project. The questions and our responses follow:

I.

QUESTION: "Whether the Government has breached the contract with the utilities by its failure during the Carter Administration to use its best efforts to continue the project, or has breached the contract for any other reason."

We do not have, nor could we readily obtain, the information essential to address whether for any reason the Government may be held to have breached its contract with the utilities. We believe such issues are more amenable to resolution by courts of law or agency disputes procedures.

II.

QUESTION: "Assuming the contract was not breached by the Government, is there a contractual commitment or other legal responsibility to return the utility contributions?"

We are not aware of any contractual provision that deals directly with the question of whether the utilities' contributions should be returned if the CRBRP is terminated. Moreover, certain portions of the contract may imply that this matter was not contemplated by the parties.

Paragraph 11.5 of the contract deals with the financial obligations of the Project Management Corporation (PMC) and ERDA (now DOE) to each other following termination of the project. Paragraph 11.5.1 specifically states that ERDA has the right to collect any monies held by PMC and the right to collect any monies due to PMC but unpaid as of the date of termination under any

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Utility Contribution Agreement (UCA). Article XII(a) of the UCA incorporates paragraph 11 by reference. These terms do not appear consistent with a responsibility on the part of ERDA to return the utilities' contributions. As with your first question, however, this question raises a matter of contract construction that can only be resolved definitively in accordance with the agreed-upon disputes resolution procedure or through litigation.

III.

QUESTION: "Could the Government conceivably be responsible for repaying the utility contributions pursuant to Pub. L. 85-804 and through either a management decision or a Board of Contract Appeals decision rendered on the basis of equity to the utilities?"

Public Law 85-804, 50 U.S.C. §1431 et seq. (1976), was enacted to facilitate the amendment and modification of contracts entered into in connection with the national defense. The statute sets forth a two-pronged test for its application to any given contract. First, the contract must be one entered into by an agency that has national defense responsibilities (50 U.S.C. §1431), and, second, the statute is only effective during a declared national emergency (50 U.S.C. §1435). Generally, the courts have approached the 1976 law and its predecessor provisions (the First War Powers Act, 50 U.S.C. App. 611) as embracing national defense contracts entered into by agencies with defense functions. See, e.g., Winder Aircraft Corp. of Florida v. United States, 412 F.2d 1270, 188 Ct. Cl. 799 (1969); and Bolinders Co. v. United States, 153 F. Supp. 381 (Ct. Cl. 1957). Regarding the declaration of a national emergency, while the National Emergencies Act, Pub. L. 94-412, September 14, 1976, terminated certain declarations of national emergency, it did not do so with regard to Pub. L. 85-804. See 50 U.S.C. §1651 (a)(6) as added by Pub. L. 94-412.

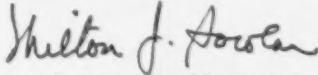
Thus, while one part of the two-pronged test under Pub. L. 85-804 apparently is satisfied, there remains the question of whether the CRBRP undertaking is to be regarded as a "national defense" matter. In this connection, representatives of the Department of Energy informally told us that the AEC, the original governmental party to the contract pursuant to §106 of Pub. L. 91-44, July 11, 1969, traditionally took the view that all AEC contracts were related to national defense. The Department representatives, however, expressed no view as to whether DOE adopts the AEC position regarding the CRBRP agreement.

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The responsibility to render decisions of whether and to what extent DOE contracts are for handling under Pub. L. 85-804 rests initially with DOE and, on appeal, the Energy Board of Contract Appeals. See 41 C.F.R. 9-17.101(a) (1979).

We have no authority to render Pub. L. 85-804 determinations, and therefore, it would be inappropriate for us to express an opinion concerning the possible applicability of Pub. L. 85-804 to the CRBRP contract.

Sincerely yours,

A handwritten signature in cursive script, reading "Milton J. Fowler".

Acting Comptroller General
of the United States